BULLETIN OF THE
SCHOOL OF EDUCATION
INDIANA UNIVERSITY

Vol. VII BLOOMINGTON, INDIANA No. 6

JULY, 1931

Entered as second-class mail matter September 30, 1924, at the postoffice at Bloomington, Indiana, under the act of August 24, 1912. Published six times a year from the University Office, Bloomington, Indiana.

Efficiency in College Management

By

JOHN DALE RUSSELL

Associate Professor of Education
The University of Chicago

Bureau of Coöperative Research, Indiana University School of Education

HENRY LESTER SMITH, Director

Price, 50 cents. For sale by the University Bookstore, Bloomington, Indiana.

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Loyola Digest
Wilson Education Index

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Submitted in partial fulfillment of the requirements for the degree Doctor of Philosophy, in the School of Education, granted by the Graduate School of Indiana University.

Published by the

BUREAU OF COÖPERATIVE RESEARCH

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Acknowledgments

WHEN a staff of educators has collaborated for some time in a program of survey work, it eventually becomes difficult to distinguish the contributions which each has made to the general thinking of the group. The writer's first acknowledgments should therefore go to his colleagues on the staff engaged in surveying the educational institutions affiliated with the Methodist Episcopal Church, particularly to Floyd W. Reeves and Hugh C. Gregg, both of whom, in addition to stimulating the general ideas promulgated in this study, have read and criticized the manuscript in its preliminary form. A peculiar debt is owed to Floyd W. Reeves, by whom the writer was first encouraged to undertake research in the field of college organization and administration, and with whom he has been privileged to collaborate in the making of several studies relating to higher education.

The courtesy of The Commission on Survey of Educational Institutions of the Methodist Episcopal Church, in allowing the use of materials collected in the surveys of colleges, is recognized. Mr. J. P. MacMillan, Secretary of the Commission on Survey and Assistant Secretary of The Board of Education of the Methodist Episcopal Church, has read and criticized the manuscript of this study in its preliminary form; the thanks of the writer are due Mr. MacMillan for many valuable suggestions.

The writer acknowledges his debt to Dean H. L. Smith of the School of Education of Indiana University for guidance and encouragement in the prosecution of this study.

JOHN DALE RUSSELL.

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PART I

INTRODUCTION

CHAPTER I

THE PROBLEM AND METHOD OF THE STUDY

The Problem

THE task of administering a college may be resolved into two fundamental problems: (1) how to secure the income necessary for the support of the program attempted; and (2) how to obtain the greatest educational returns for the funds expended. The present study undertakes no analysis of the first of these two problems, but is limited to a consideration of the second. Stated positively, the problem of this study deals with efficiency in college management; stated negatively, the question becomes one of the sources and amount of inefficiency involved in administering college programs.

A problem of efficiency involves the measuring and the relating of two factors which may be called, in engineering terminology, input and output. In the study of efficiency in college management the input factor is fairly easy to measure. It is readily reducible to a dollar-and-cents item, and is obtained thru a calculation of the financial expenditures by the college during a given fiscal period. The determination of the amount of the educational output, however, is much more difficult, since it must be expressed in both qualitative and quantitative units.

In quantitative terms two measures of educational output are frequently employed: (1) the number of students enrolled during the fiscal period; and (2) the number of "hours" or other units of credit granted during the period. Thus arises the use of unit costs, such as "expenditure per student-credit-hour," "expenditure per student enrolled," etc., as measures of efficiency.[1] It is obvious that, if equal qualitative results be assumed, a college with an annual expenditure per student of $250 is much more efficient than one with an annual expenditure of $400 per student.

The question may well be raised as to the possibility of a better measure of educational output than is afforded by student enrolment or student-credit-hours. It is conceivable that a technique might be developed for measuring the educational production directly by means of standardized tests. Such a technique, however, seems only remotely possible at present; five hindrances to its development may be mentioned. (1) Many of the desired outcomes of college education are not yet susceptible of objective measurement. (2) Colleges vary in their individual objectives, and it would be difficult to agree upon a common standard of attainment which would be suitable for any large number of institutions. (3) The educational product must be measured in terms of what is done with the raw material received, and any measure of final achievement by students must be properly related to their initial capabilities. A satisfactory technique for such measurement has not

[1] Edwin B. Stevens and Edward C. Elliott. *Unit Costs of Higher Education.* The Macmillan Company, New York, 1925, Chapter VII.

been developed at the college level. (4) There is at present no standard "unit" of educational attainment other than the credit-hour. (5) No technique for measuring educational efficiency on the basis of standardized test results is in common use at the elementary and secondary school levels, where conditions for its development would be much simpler than at the college level. It therefore seems unlikely that a technique of this type for measuring the educational production of colleges will soon be available.

Altho the techniques for the measurement of educational output in quantitative terms are at present not wholly satisfactory, the measurement of educational quality presents much greater difficulties. It is a matter of common observation that the programs of certain colleges are considered to be superior to those of others. To the mind of the layman this simply means that a student gets a better education at some colleges than at others. In more technical language it may be said that the units of educational output vary in their qualitative values. Accurate measures of this variation have not been developed.

One very crude measure of the general quality of college programs may be pointed out—the type of accreditation held. Colleges of liberal arts can be divided into such categories as: (1) those holding no accreditation of any kind; (2) those with only local or state accreditation; (3) those with accreditation by one of the regional standardizing agencies; (4) those on the approved list of the Association of American Universities. These categories are only roughly indicative of the quality of the program of an institution. It is recognized that within each group wide variations in quality exist; and Reeves[2] has shown that there are colleges with only local or state accreditation that, by every available index of quality, are superior to many institutions holding membership in regional standardizing associations.

In fact, it has been clearly demonstrated that per capita expenditure is one of the best indexes of the quality of the educational program.[3] In other words, the amount of money spent by a college for the education of a student is one of the best indications of the degree of excellence of the education received by that student. This formula, it must be observed, assumes equal efficiency in administration, just as in the illustration previously given (page 11) equal educational quality is assumed when the efficiency of institutions is inferred from their relative expenditures per student.

Under actual conditions neither the assumption of equal quality nor

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[2] Floyd W. Reeves. "Financial Standards for Accrediting Colleges (A Committee Report)." *The North Central Association Quarterly*, Vol. II, No. 4, March, 1928, p. 375.

[3] Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence.* Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, September, 1929, p. 38.

Also Floyd W. Reeves and John Dale Russell. "Standards for Accrediting Colleges." *The North Central Association Quarterly*, Vol. III, No. 2, September, 1928, p. 214.

Cf. also Donald J. Cowling. "An Analysis of the Financial Needs of a College of Liberal Arts for One Thousand Students." In *Problems of College Education* (Earl Hudelson, ed.). The University of Minnesota Press, Minneapolis, 1928, p. 57.

Cf. also John B. Johnston. *The Liberal College in Changing Society.* The Century Company, New York, 1930, p. 310.

that of equal efficiency is justified in comparisons among colleges. Equal quality cannot be assumed because of the difficulties surrounding its measurement and because the probabilities are that the variation in this factor takes the form of a continuous series rather than the form of a few sharply defined categories. Equal efficiency cannot be assumed for similar reasons. There is some inefficiency in the management of almost every college; reports of careful surveys almost without exception point out wastes in management or specific opportunities for more efficient use of available funds.

If per capita expenditure is to be used as a valid index of quality, it becomes important to separate from the true educational costs the expenditures due to inefficiency of the management. Referring to the illustration previously given, it is entirely possible that the college spending $400 per student is wastefully managed, so that a large portion of the amount is not used to purchase the desired educational product; the college spending $250 per student may be very efficiently managed, the entire amount of the expenditure being reflected directly in the purchase of education. Under such circumstances, the difference in quality of education produced in the two institutions cannot be inferred from the per capita cost figures. Or the cases may be reversed and the college spending $400 per student may be assumed to be efficiently managed and the other one not. In such a case the difference in the quality of the two educational programs is greater than would be indicated by the relative per capita expenditures.

It is the purpose of this study to work out a simple method of separating from the total educational expenditure the amount which is ineffective in producing educational results. The problem may be stated as the development of a technique for the determination in a given college of the amount of the per capita expenditure which is ineffective in contributing to the educational product.

The solution of this problem has two immediate practical applications. In the first place, it should be of value to every college administrator to have available a method for testing the management of his own institution. By observing the points at which the college he serves falls short of a standard of efficiency, he can more wisely guide the adjustment of its program so as to produce greater educational results for the funds available. In the second place, certain agencies, particularly the standardizing associations, are intensely interested in measures of the quality of the educational program in the colleges under their purview.[4] It is hoped that the refinement of this unit cost item (per capita expenditure for educational purposes) by the elimination of non-effective expenditures may result in a more accurate and dependable index of educational excellence.

[4] Cf. "Proceedings of the Commission on Institutions of Higher Education," (Item 22). *The North Central Association Quarterly*, Vol. III, No. 1, June, 1928, p. 59.

Also "News Notes and Editorial Comments." *The North Central Association Quarterly*, Vol. IV, No. 1, June, 1929, p. 12.

Also "Proceedings of the Commission on Institutions of Higher Education," (Item 25). *The North Central Association Quarterly*, Vol. V, No. 1, June, 1930, p. 70.

The word "college" as used thruout this study refers to the typical four-year college of liberal arts. The conclusions drawn are intended to apply particularly to colleges of liberal arts not receiving tax support. In many instances, however, the observations apply with equal force to all types of institutions of higher learning.

Other Studies of This Problem

There is no extensive body of literature treating the topic of college efficiency. Most surveys of institutions of higher learning have dealt with this problem from the point of view of the individual college, and have not attempted to summarize types of inefficiency which are of general importance. In the Bibliography of this study are noted some of the more important titles dealing with the problem of college administration in general.

The compilation of articles published under the editorship of Robert L. Kelly, entitled *The Effective College*,[5] suggests in a comprehensive manner the many needs of an institution which aspires to educational excellence. The article by President Cowling of Carleton College, entitled "An Analysis of the Financial Needs of a College of Liberal Arts for One Thousand Students,"[6] furnishes many stimulating ideas regarding the resources necessary for a satisfactory educational program. President Cowling apparently has clearly in mind the development of a program which will be economical in its administration as well as effective in its results.

The present study is built directly upon the studies initiated by Floyd W. Reeves, to which reference has already been made. One of the most recent of these studies, in which the writer was privileged to collaborate, was rendered as a report of the Committee on Standards to the Commission on Higher Institutions of the North Central Association of Colleges and Secondary Schools.[7] This committee report, along with other studies that have shown the unsatisfactory nature of the present standards of accreditation, evoked an action by the Association looking toward the revision of its standards. Another committee of the Association is at this writing engaged in the task of setting up standards for accreditation by means of scientific studies of the factors associated with excellence in institutions of higher learning.

Method of the Study

Two processes are used in this study of efficiency in college management. The first consists of the collection and classification of types of inefficiency which have been observed in colleges; the second consists of the development of a technique for reducing the various types of ineffi-

[5] Robert L. Kelly, ed. *The Effective College*. Association of American Colleges, New York, 1928.

[6] Donald J. Cowling. *Op. cit.*

[7] Floyd W. Reeves and John Dale Russell. "Standards for Accrediting Colleges." *The North Central Association Quarterly*, Vol. III, No. 2, September, 1928, p. 214.

ciency to a quantitative figure, and for calculating the amount that is effective in producing the educational product. This latter figure is termed "effective educational expenditure," or expenditure on the basis of equivalent efficiency. In this report, following Part I, which presents introductory material, Part II deals with the types of inefficiency commonly found, and Part III presents the development of the technique for computing the amount of effective educational expenditure.

The materials used in discussing and illustrating the types of waste and inefficiency in college management have been drawn very largely from the experience of the writer and his colleagues in making college surveys. In most of the surveys in which the writer has participated the question of efficiency of management has been given an important place. For example, in the program of survey recently completed among the colleges affiliated with the Methodist Episcopal Church the question: "Is the institution being economically administered from the financial point of view?" was one of sixteen questions which the survey staff was asked to answer concerning each college. A careful analysis of this problem in a representative group of upwards of one hundred educational institutions affords the background of experience upon which the writer draws in the general discussion of the types of inefficiency found in American colleges.

The discussion presented in Part II of this study is not presumed to afford a complete outline of all the possible means by which inefficiency may be exhibited in college management. Rather, the attempt is to present a general outline of types of uneconomical administration, with specific instances of the major sources of inefficiency. The list of specific instances is believed to be sufficiently exhaustive to comprehend most of the probable sources of inefficiency, altho the claim for absolute completeness is not made.

The classification of types of inefficiency has been organized around the functions performed by the college. The major function of a college, as commonly recognized, is the giving of instruction to students. Besides classroom and laboratory teaching, the direct instructional service includes such items as the provision of instructional supplies and apparatus, and the maintenance of libraries, museums, and other supplementary educational facilities. Auxiliary to this major function and, for the most part, essential to its effective performance, are such functions as: (1) providing an administrative organization for the control and supervision of the institution; (2) maintaining a financial structure for the support of the institution; (3) operating and maintaining buildings in which to carry on the work of the college; (4) operating certain supplementary business activities, such as dormitories, dining-halls, bookstores, etc.; (5) providing for the physical, mental, and moral welfare of students; (6) recruiting prospective students of the type which the institution wishes to attract; and (7) providing financial assistance, such as scholarships, loans, etc., to worthy students.

In the discussion of types of inefficiency, as organized around these functions, no attempt is made to prevent overlapping. In case a single instance of waste or inefficiency affects more than one function, it is mentioned under each heading.

The development of the technique for reducing the various types of inefficiency to a quantitative figure, as presented in Part III, consists of two steps: first, an analysis showing that all the types of waste and inefficiency discussed in Part II may finally be resolved into three categories; second, the actual computation of the amount of non-effective expenditure involved in each of these three categories and of the total effective educational expenditure, using for illustrative purposes data from thirty-four colleges.

The statistical data presented in this study have been collected in connection with recent surveys in which the writer has participated. In every instance the data were collected during a visit to the institution, either personally by the writer or by a member of the survey staff working under his immediate direction. Extreme care was used in the collection of the financial data.

Anyone who has examined the accounting systems of a few educational institutions will recognize the futility of trying to make comparisons between colleges on the basis of their own financial statements. The lack of uniformity in accounting methods, in terminology, and in classification of expenditure and income renders impossible any comparative use of financial data directly from the college reports.

The data used in this study relating to financial expenditure have been set up after an entire reclassification, based on an analysis of the transactions for the year, made by a member of the survey staff in conjunction with the local business officer of the institution concerned. In every instance the data were taken from the actual books of account and from the official audit for the year. After the reclassification of expenditures the amounts were reconciled with the totals as given by the college audit in order to assure their accuracy. This exhaustive procedure was followed so as to be certain that the figures used were absolutely comparable.

The following is a list of the thirty-nine institutions from which data are taken for use in this study, together with the date on which each was visited:

Albion College, Albion, Michigan, October, 1930
Allegheny College, Meadville, Pennsylvania, April, 1930
Baker University, Baldwin City, Kansas, January, 1931
Baldwin-Wallace College, Berea, Ohio, October, 1930
Brothers College, Madison, New Jersey, March, 1931
Central Wesleyan College, Warrenton, Missouri, May, 1930
Centre College, Danville, Kentucky, January, 1929
Cornell College, Mount Vernon, Iowa, December, 1929
Dakota Wesleyan College, Mitchell, South Dakota, July, 1930
DePauw University, Greencastle, Indiana, November, 1930
Dickinson College, Carlisle, Pennsylvania, April, 1930
Evansville College, Evansville, Indiana, March, 1930
Geneva College, Beaver Falls, Pennsylvania, January, 1931
Georgetown College, Georgetown, Kentucky, February, 1929
Gooding College, Gooding, Idaho, February, 1931
Hamline University, St. Paul, Minnesota, October, 1929
Illinois Wesleyan University, Bloomington, Illinois, January, 1931
Intermountain Union College, Helena, Montana, February, 1931
Iowa Wesleyan College, Mount Pleasant, Iowa, December, 1929
Kansas Wesleyan College, Salina, Kansas, December, 1930

Lawrence College, Appleton, Wisconsin, May, 1930
MacMurray College, Jacksonville, Illinois, January, 1931
McKendree College, Lebanon, Illinois, December, 1930
Morningside College, Sioux City, Iowa, November, 1929
Mount Union College, Alliance, Ohio, October, 1930
Nebraska Wesleyan University, Lincoln, Nebraska, December, 1930
Ohio Northern University, Ada, Ohio, October, 1930
Ohio Wesleyan University, Delaware, Ohio, October, 1930
Oklahoma City University, Oklahoma City, Oklahoma, May, 1930
Ozark Wesleyan College, Carthage, Missouri, May, 1930
College of the Pacific, Stockton, California, February, 1931
College of Puget Sound, Tacoma, Washington, February, 1931
Simpson College, Indianola, Iowa, December, 1929
Southwestern College, Winfield, Kansas, December, 1930
Union College, Barbourville, Kentucky, December, 1929
University of Chattanooga, Chattanooga, Tennessee, November, 1929
Valparaiso University, Valparaiso, Indiana, January, 1929
West Virginia Wesleyan College, Buckhannon, West Virginia, March, 1931
Willamette University, Salem, Oregon, February, 1931

It will be noted from the dates given above that the colleges of this group were all visited within a period of approximately two years. The financial data given in subsequent sections of this study are in all cases for the fiscal year immediately preceding the date of the survey visit. All other data, unless specifically noted otherwise, are for the academic year current at the time of the survey visit.

It will be observed from the foregoing list that the group of thirty-nine colleges displays a rather wide geographical distribution. Twenty-two different states are represented. The great majority of the institutions are in the north central region of the United States.

The colleges vary widely in age. The oldest has a history that goes back a century and a half; three or four of the youngest have been established within the past decade. All of these institutions were at the time of the survey offering a four-year program of liberal arts work. Altho some bear the title of "University," the programs in the great majority of them are distinctly typical of those usually found in the American college of liberal arts. In the case of four institutions that maintain professional schools of law, pharmacy, or engineering, these units have not been included in any of the tabulations presented in this study except those relating to finance.

Since the data used in this study were all originally collected for the purposes of surveys of individual colleges, no apology is needed for the failure to present information from each of the schools in all the tabulations used in this study. In each case the tables include data from all the institutions from which the pertinent information was obtained. The attempt is generally to illustrate, rather than to prove, and for this purpose only a representative sampling of institutions is needed. Because of the confidential nature of the data, thruout this study colleges are referred to by number rather than by name. A given number does not refer to the same college thruout the whole study, but in each table the institutions are assigned numbers in serial order as listed.[8]

[8] The institutions bear the same numbers thruout Tables XVII to XXI.

Altho the number of colleges included in this study is not large, it is of sufficient size to render fairly reliable the statistical techniques that are used. In general the group represents a rather satisfactory cross section of American colleges of liberal arts thruout the Middle West. The materials of Part II have been based not only upon observations in these thirty-nine colleges, but also upon the writer's experience in surveying a number of other colleges and universities. For the purpose of setting up a technique, as developed in Part III of this study, the list of colleges used affords ample opportunity for illustrative materials. It is recognized, however, that before absolute standards of efficiency can be set up, a study involving data from a much larger number of institutions will be necessary.

PART II

TYPES OF INEFFICIENCY IN COLLEGE MANAGEMENT

CHAPTER II

INEFFICIENCIES IN THE INSTRUCTIONAL FUNCTION

THE function of instruction may be broken up into four sub-classifications: (1) the provision of a teaching personnel; (2) the organization of subject-matter offerings; (3) the provision of materials and supplies to be used in teaching; and (4) library service.

Provision of Teaching Personnel

Teaching staff larger than necessary. The type of inefficiency most frequently encountered in four-year colleges, which is also the type responsible in many institutions for the largest single amount of non-effective expenditure, is the provision of a teaching staff larger than needed. Reeves and Russell[1] have developed the thesis that in an undergraduate college of liberal arts of 500 students, with only limited funds available, a ratio of twenty students to one faculty member can be maintained without serious loss of educational effectiveness. Altho in colleges with ample funds a somewhat lower ratio may appear desirable,[2] it is important that faculty salaries be set at a satisfactory level before the number of members on the teaching staff is increased and the student-faculty ratio lowered.

Administratively the problem of keeping the size of the faculty adjusted both to the needs of the student body and to the resources of the institution is a difficult matter. Departmental ambitions for the offering of a varied program of courses are very likely to outrun available resources and to bring pressure for the employment of additional faculty members. Fluctuations in the student-credit-hour loads of the various departments increase the difficulty. Even under conditions of a stable total enrolment, an additional instructor must be occasionally added to a growing department; but it is usually difficult to locate the department which, by reason of its diminishing student load, should suffer a reduction in teaching staff. To persuade such a department to reduce its staff, even after the advisability of this step becomes clear to the administrator, is no easy task. Frequently, because of the permanent tenure held by faculty members, it is practically impossible to make reductions in the teaching staff at points where curtailment is obviously needed. In case a general and continuous decline in enrolment is experienced, it is very difficult to make the corresponding reductions in the size of the teaching staff.

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[1] Floyd W. Reeves and John Dale Russell. *College Organization and Administration.* Board of Education, Disciples of Christ, Indianapolis, 1929, p. 194.

[2] Floyd W. Reeves. "The Cost of Education in an Effective College." In *The Effective College* (Robert Lincoln Kelly, ed.). Association of American Colleges, New York, 1928, Chapter XXV.

Despite the administrative difficulties that surround the adjustment of size of faculty to size of student body, the opportunities for economy afforded by a courageous attack on the problem are of primary importance.

Light instructional loads. A second type of inefficiency in the provision of teaching personnel is the assignment of instructional loads that are lighter than necessary. In most colleges faculty members are customarily employed with the understanding that their service to the institution demands their full time. Following the assignment of the regular teaching load, it is almost without exception found that certain members of the staff are taking on other engagements, either from a desire to supplement their salaries, or from an interest in the outside activity. Data gathered in connection with recent surveys show that on the average approximately 50 per cent of the faculty members take on outside activities of a remunerative nature.

Many colleges actually encourage their instructors to take on this extra load by offering additional pay for extension courses. (A few colleges are beginning to count extension teaching as a part of the regular load, following the suggestion of the North Central Association of Colleges and Secondary Schools.) The widespread practice of taking on extra activities indicates that the custom of full-time employment is largely a fiction; many, perhaps a majority, of the faculty members of the four-year colleges with which the writer is familiar make no pretense of considering the institution as entitled to all of their services in return for the regular full-time salary that they receive.

It is only fair to point out, on the other hand, that many conscientious faculty members do render their college a service which represents their entire available energy. The amount of loss of efficiency on account of light service loads becomes therefore very largely a matter of the *esprit de corps* and the morale within the faculty, rather than a matter of exact quantitative measurement of load assignments.

Various measures of service load have been proposed and used in college surveys. Perhaps the most common is the number of credit-hours taught. This measure is used by the various regional standardizing associations;[3] and in most colleges having a definite understanding as to what constitutes a "full load," the measure is in terms of credit-hours. As a supplement to the credit-hour unit, the clock-hour of teaching is sometimes used. This measure gives the instructors having laboratory work an advantage in comparison with the use of the credit-hour unit. A weighted credit-hour measure is also sometimes used, with laboratory work weighted into the load at something more than its credit-hour value and something less than its clock-hour value.

Still another measure of load which is frequently used, generally *ex post facto*, is the student-credit-hour load. This measure differs from the credit-hour by taking into account the number of students in the classes taught. For example, a class of twenty students in a course carrying three credits would give a load of sixty student-credit-hours.

[3] William A. Cook. "A Comparative Study of Standardizing Agencies." *The North Central Association Quarterly*, Vol. IV, No. 3, December, 1929, p. 377.

Reeves and Russell [4] have proposed another measure, a composite of three weighted factors, credit-hours taught, student-credit-hours taught, and preparation hours, the latter being the number of credit-hours for which new preparation must be made. Finally, some surveys have attempted to compile data concerning the total working load of faculty members in terms of clock-hours per week spent in all kinds of service for the institution.[5]

In almost any college, computation of these various quantitative measures of service load will reveal striking differences among the members of the faculty with regard to the burden carried. Table I shows the median teaching loads and the ranges of loads, in terms of credit-hours and student-credit-hours, in thirty-eight colleges recently surveyed. First-semester figures are used for some of the colleges, while second-semester figures are used for others, depending upon the time of the visit of the survey staff. In this table only members of the faculty who are supposed to be devoting full time to the instructional work of the institution are included. Teaching loads in music and physical education have not been included in this tabulation, since much of the work in these fields is not on the usual credit-hour basis.

This table shows that in all of these institutions there is a considerable range in the credit-hour loads carried by full-time teachers. Since schedule assignments are usually made on the basis of credit-hours, it would be expected that, within a college, the range of load as measured by this unit would be small. When loads are considered in terms of student-credit-hours, the ranges as shown in Table I are large in every college. It is thus apparent that "full-time" teaching has a different meaning for some members of the faculty from that which it has for others, if the teaching service be measured either by the hours taught or by the student-credit-hour load carried. It appears also that great variation exists in load assignments among the colleges, as well as within each institution.

The standardizing associations have generally set sixteen credit-hours as the maximum which an instructor in an undergraduate college may carry without "endangering educational efficiency." [6] In most colleges of liberal arts, however, fifteen credit-hours is considered as a full-time load. It is only fair to point out that in secondary schools a load corresponding to twenty-five semester hours is considered standard; many of the courses at the freshman and sophomore level in college correspond closely in content and method to those in the upper years of high school.

Individual faculty members differ widely in their ability to carry instructional loads. This is a fact of common observation which is totally

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[4] Floyd W. Reeves and John Dale Russell. *College Organization and Administration.* Board of Education, Disciples of Christ, Indianapolis, 1929, p. 178.

[5] Floyd W. Reeves, et al. *Report of a Survey of the State Institutions of Higher Learning in Indiana.* Indianapolis, 1926, p. 98.

[6] William A. Cook. *Loc. cit.*

Also "Standards for Accredited Institutions of Higher Education." *The North Central Association Quarterly,* Vol. V, No. 1, June, 1930, p. 73.

TABLE I. RANGES OF TEACHING LOADS AND AVERAGE TEACHING LOADS OF FACULTY MEMBERS WHO DEVOTE THEIR FULL TIME TO INSTRUCTION, IN THIRTY-EIGHT COLLEGES

College number	Credit-hour load			Student-credit-hour load		
	Of the instructor having the lightest load	Average load for entire faculty	Of the instructor having the heaviest load	Of the instructor having the lightest load	Average load for entire faculty	Of the instructor having the heaviest load
1	12	17.7	24	171	359	822
2	10	15.1	18	108	329	515
3	11	14.7	23	118	309	673
4	8	15.1	18	68	301	635
5	9	14.4	24	129	293	419
6	12	16.2	24	112	292	482
7	11	15.2	23	43	292	521
8	9	13.3	21	95	292	820
9	9	15.3	22	69	288	770
10	8	15.6	21	83	281	478
11	8	14.3	23	75	280	795
12	8	14.2	26	131	275	605
13	10	14.4	19	123	274	495
14	7	11.4	17	57	274	798
15	6	14.2	21	69	268	654
16	7	12.9	17	88	266	528
17	12	16.1	20	180	264	364
18	9	14.2	22	94	264	633
19	12	14.7	20	165	263	451
20	10	14.5	19	50	262	396
21	8	14.6	22	88	248	501
22	13	17.1	27	81	247	377
23	15	15.9	20	75	243	410
24	11	16.0	23	62	242	382
25	10	14.6	18	42	238	456
26	9	13.4	26	98	224	414
27	6	12.9	19	69	221	493
28	11	14.0	18	42	211	390
29	9	12.6	16	99	210	326
30	8	13.8	16	111	207	406
31	7	14.8	21	63	199	355
32	9	11.9	16	39	194	538
33	12	15.3	23	90	173	309
34	8	16.0	23	45	165	381
35	10	15.6	17	84	165	297
36	7	13.3	19	30	162	243
37	6	13.0	16	45	154	354
38	7	9.6	18	38	86	135
Median	9.0	14.55	20.5	82.0	262.5	467.0

unrecognized by the standardizing agencies. It does not seem feasible, moreover, to adjust salaries to take into account the load carried, altho this was generally done when higher education was operated under the fee system.[7] Such a plan of salary adjustment entails other administrative difficulties which probably outweigh any advantages that might be gained in relating salary payments more directly to productivity.

It seems probable that no final pronouncement can be made regarding the amount of waste involved in "underloading" faculty members. Particularly is this true in an institution where research and scholarly production are expected as a part of the service of faculty members. The assignment of administrative responsibilities to faculty members is another complicating factor. Educational research seems singularly barren of experimental studies regarding optimum load assignments for members of the instructional staff, altho the University of Minnesota studies of class size[8] point to probable revisions in some details of present standards. The probability that optimum load varies with the individual instructor makes the fixing of absolute standards a difficult matter.

Faculty salaries. In the colleges included in this study the total payments for faculty salaries are on the average 63 per cent of the total expenditures for educational purposes. Since faculty salaries constitute by far the largest single item of educational expenditure, it would seem wise to scrutinize carefully the budget for this purpose in order to discover possible opportunities for ineffective use of funds in the payment of faculty salaries.

There is today no necessity for arguing that, in general, faculty salaries are lower than desirable. This fact is so widely recognized as to need no citation for support. In every college with which the writer has had recent contact a vigorous effort is being made to obtain funds for increases in faculty salaries.

The question may be raised, however, as to whether or not some institutions are paying salaries higher than is necessary, considering the quality of the faculty members. The writer's contact with numerous colleges leads him to the conclusion that an overpaid faculty is decidedly rare in American higher education. Almost invariably the college with a low average faculty salary will have a teaching staff of mediocre quality. In practically every case the presence of a superior instructional staff is associated with a better-than-average salary scale. Statistical proof of this relationship between average faculty salary and educational excellence is presented by Reeves and Russell.[9]

It is true that there is a grave possibility of paying some individual member of the faculty more than he is worth. The formation of an accurate judgment regarding the real worth of a faculty member takes

[7] Cf. Adam Smith. *Wealth of Nations* (Everyman Edition). J. M. Dent and Sons, Ltd., London, 1910, Vol. II, Book V, Chapter I, p. 246.

[8] Earl Hudelson. *Class Size at the College Level.* The University of Minnesota Press, Minneapolis, 1928, p. 270.

[9] Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence.* Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, 1929, pp. 35 ff.

time, and in the interval between the first employment of a teacher and the discovery of his true value to the institution there may be some maladjustment of salary. It is important to note, however, that it is equally likely that other faculty members are paid less than they are really worth. In fact, under-payment is probably a much more common condition than over-payment. Altho there may be these individual cases in which there is poor adjustment between the salary paid and the real worth of the teacher, such cases are smoothed out in the average for the whole institution. For a college as a whole there is rarely any considerable amount of funds which are ineffectively used because of excessive salaries for faculty members.

Small classes. One of the important types of inefficiency in the provision for the instructional function is the maintenance of a larger number of small classes than is necessary. The presence of this type of waste usually overlaps that of two of the previously mentioned types, namely, the employment of too large a teaching staff, and the assignment of teaching loads that are too light. Table II presents data regarding the size of classes in thirty-nine colleges. In this table independent study and honors courses are not considered as small classes.

The data of this table show that there is a wide range in the percentage of small classes within this group of colleges. Eleven of the thirty-nine institutions have less than 10 per cent of their classes with fewer than five students; seven have less than 25 per cent of their classes with fewer than ten students. On the other hand, half of the thirty-nine colleges have more than 15 per cent of their classes with fewer than five students, and one-fourth of the colleges have more than 40 per cent of their classes with fewer than ten students.

Prior to the publication of the Minnesota studies of class size at the college level,[10] it was commonly believed that the smaller the class the greater the instructional benefit by the student. Many colleges formerly advertised (and many still do) that their classes were small, seeking thereby to attract students. The number of institutions from which data are presented in Table II is rather small for the drawing of any final conclusions that are statistically sound, but the opportunity is offered for testing out in a general way the relation of class size to the standing of the institution.

Eighteen of the colleges for which data are presented are on the approved list of the Association of American Universities; eight hold accreditation from their respective regional standardizing associations but not from the Association of American Universities; thirteen hold only state or local accreditation and are not members of their regional associations. In Table II the institutions are arranged in order of median size of class, with the institution having the largest median size of class at the top. In this ranking order, the upper half of the table, listing twenty colleges, contains fourteen of the eighteen institutions on the approved list of the Association of American Universities, but only two of the eight colleges holding regional accreditation only, and only four of the thirteen colleges lacking regional accreditation are in the

[10] Earl Hudelson. *Op. cit.*

TABLE II. SIZE OF CLASSES* AT THIRTY-NINE COLLEGES

College number	Median size of class	Percentage of classes with fewer than five students	Percentage of classes with fewer than ten students	Total number of students enrolled	Accredited status†
1	21.0	14.9	26.3	528	AAU
2	20.9	2.8	8.6	570	AAU
3	20.5	8.9	21.9	1,831	AAU
4	20.3	6.2	19.8	1,442	AAU
5	18.8	15.4	29.1	752	AAU
6	18.6	4.9	17.7	505	Reg.
7	18.3	10.3	28.6	799	State
8	18.3	15.5	29.1	437	AAU
9	18.3	9.3	22.8	621	AAU
10	17.7	7.7	30.0	354	Reg.
11	17.5	5.3	20.9	641	AAU
12	17.3	1.4	20.0	839	State
13	17.2	9.6	29.0	536	State
14	16.8	9.0	28.0	668	AAU
15	16.5	16.3	28.8	240	AAU
16	16.5	13.7	26.3	782	AAU
17	16.1	19.6	37.7	546	AAU
18	15.8	10.9	31.7	599	AAU
19	15.2	13.3	33.7	303	State
20	15.1	17.3	35.2	557	AAU
21	14.7	16.9	36.8	324	State
22	14.5	5.7	30.2	261	Reg.
23	14.5	20.9	33.6	422	AAU
24	14.0	10.8	31.4	365	Reg.
25	13.9	16.2	36.8	455	Reg.
26	13.9	15.4	36.9	347	Reg.
27	13.6	13.3	33.6	425	AAU
28	13.5	14.0	40.2	421	AAU
29	13.0	15.2	39.3	658	Reg.
30	12.7	16.2	35.1	204	State
31	12.7	18.4	41.3	573	Reg.
32	12.5	18.2	41.4	267	State
33	10.6	12.5	47.5	114	State
34	10.5	21.1	48.3	673	AAU
35	10.5	22.4	46.3	199	State
36	9.0	22.4	56.9	162	State
37	8.6	31.2	57.8	135	State
38	7.5	41.1	58.9	354	State
39	7.1	43.3	59.5	64	State

*Independent study and honors courses are not considered in this table.

†AAU means accredited by the Association of American Universities. Reg. means accredited by regional association, but not by the Association of American Universities. State means accredited only by the state, lacking regional and national accreditation.

upper half of the list shown in Table II. For the eighteen colleges on the approved list of the Association of American Universities the average of the median size of classes is 16.9; for the thirteen colleges not holding regional accreditation the average is 12.4. The difference between the two averages is 4.5 ± 0.79, and is statistically significant.[11] It is important to note the strong tendency for the colleges having the highest accredited status to have a larger average size of class than the institutions holding only state accreditation.

A comparison may also be made on the basis of the percentage of classes with fewer than five students. In the eighteen colleges holding the highest accreditation the average percentage of classes with fewer than five students enrolled is 13.0; in the thirteen colleges lacking regional accreditation the average percentage of classes with fewer than five students enrolled is 19.9. The difference is 6.9 ± 2.3. The ratio of the difference to its probable error closely approaches that necessary for statistical significance, indicating a very strong probability that in any other sampling of institutions of a similar sort the colleges having the higher accredited status would always be found to have the smaller average percentage of classes with fewer than five students.

A similar comparison may again be drawn on the basis of the percentage of classes with fewer than ten students. In the eighteen colleges on the approved list of the Association of American Universities the average percentage of classes with fewer than ten students enrolled is 29.0; in the thirteen colleges lacking regional accreditation the average is 42.4. The difference is 13.4 ± 2.8, and is statistically significant. It must be concluded from these data that the colleges having the highest accredited status quite generally tend to have a smaller proportion of their classes with fewer than ten students enrolled than is the case with colleges lacking satisfactory accreditation.

Doubt may be expressed as to the significance of the classification on the basis of membership in the Association of American Universities. It will be noted that in this comparison the intermediate class of institutions—those holding regional, but not national accreditation—has been omitted. The comparison has thus been made between the two extremes in accredited status. Altho there is a considerable range in the excellence of the various institutions in each of the categories, the fact of a real difference in the average quality of the two groups of colleges between which comparisons have been made was easily apparent to the members of the survey staff who have visited these institutions. The data of this study clearly indicate that, if size of class is at all related to excellence in these colleges, the relationship is exactly the opposite of that which is generally assumed to exist. Certainly the indication is clear that mere smallness of average class size or the maintenance of a large proportion of small classes is in itself no guarantee of a high educational standard in the group of colleges studied.

It should be remembered that independent work and honors courses are not considered as small classes in this study. The maintenance of a

[11] Karl J. Holzinger. *Statistical Methods for Students in Education.* Ginn and Company, Boston, 1928, pp. 235-7.

program of honors work requires a number of relatively small instructional groups. Pending the development of satisfactory experimental evidence to demonstrate that the honors program actually is both an effective and an efficient educational organization, it seems wise to give this innovation the benefit of the doubt and not to imply that these small instructional groups necessarily involve inefficiency. It should be pointed out, however, that in the present stage of development of honors courses an exceptionally able faculty is necessary in order to give the work effectively. Colleges with only limited funds available for faculty salaries should clearly not attempt an honors program.

It may be noted from Table II that there is an important relationship between the total number of students enrolled and the average size of class or the percentage of small classes in the thirty-nine colleges for which data are given. Computation of coefficients of correlation (Pearson) gives the following results:

Total number of students enrolled, with median size of class.. $+.67 \pm .06$
Total number of students enrolled, with percentage of classes having fewer than five students..... $-.45 \pm .09$
Total number of students enrolled, with percentage of classes having fewer than ten students..... $-.56 \pm .07$

The coefficients indicate that there is an important connection between the enrolment of the institution and the size of classes. Since the correlations are far from perfect, however, the indications are that factors other than the size of the institution have an important bearing upon the size of classes and the percentage of small classes.

Other things being equal, the maintenance of a large number of small classes entails a larger expenditure for educational purposes than would be the case if fewer small classes were maintained. Since it seems clear that the maintenance of a high percentage of small classes is not essential to the provision of an educational program of high grade, it can only be concluded that the extra funds spent for an excessive proportion of small classes are non-effective in producing educational results.

The energy necessary to teach a class of five students is almost as great as that needed for a class of fifteen or twenty. Thus, in an undergraduate college having a considerable number of small classes the valuable time and energy of instructors is being frittered away. Even if the dropping of the small classes meant a reduction in the average teaching load of faculty members, this would be a clear gain. The service to the college would be considerably larger if the time used in teaching small classes were spent by the instructors upon their remaining classes, or if the time from which they would be released were used for writing or research or other forms of productive scholarship.

Assuming that the correlations between size of student body and percentage of small classes indicate that the small college must necessarily have a relatively high proportion of small classes, it is evident that the small college is itself likely to be an inefficient organization, when compared with institutions with larger enrolments. In other words, the same amount of money per student will purchase a better education in a relatively large college than in a small one, other conditions of efficiency

remaining constant. Reeves [12] has already pointed out this fact by showing that the average expenditure per student for educational purposes varies inversely with the size of the college, the relationship being non-rectilinear in character and approaching a zero correlation soon after an enrolment of 500 or more students is reached.

In a small institution, therefore, the maintenance of a relatively large proportion of small classes may be considered an unavoidable type of inefficiency. If the excellence of educational institutions is to be compared on the basis of expenditure per student, however, this unavoidable inefficiency must be checked out before valid comparisons can be drawn. Possibly there are advantages in the small college which are not susceptible of measurement by any educational tests thus far developed, or which are not reflected in the accreditation held; otherwise the unavoidable inefficiency caused by small classes must be construed as an uncompensated drawback in this type of institution.

No college can entirely avoid having some classes smaller than it would desire, owing to the exigencies of schedule and to curriculum demands. The condition which is pointed out as a type of inefficiency is the maintenance of an unreasonably large number of small classes. The question of what is a reasonable proportion of small classes will be discussed in a later section of this study.

Inadequate provisions for supervision of instruction. In most colleges little or no attempt is made to supervise instruction in a manner parallel to the commonly accepted practice in elementary and secondary schools. Failure to provide adequately for this function may properly be considered as a waste, in view of the demonstrated efficiency of supervision at the lower scholastic levels.[13]

Supervision of instruction is a function which would normally belong to the dean of the college. In the present study the expenses of the dean's office have been allocated to instruction. An analysis of the provisions for supervision of instruction in the group of colleges studied leads to the conclusion that too little, rather than too much, financial support is being devoted to this function. The instructional activities of these institutions would undoubtedly benefit by the introduction of a program of constructive supervision. The inefficiency occurring at this point is not reflected in increased expenditure, but in lessened educational product for the funds expended.

Organization of Subject-Matter Offerings

The three types of inefficiency that will be mentioned under this heading are closely related to those which have been pointed out in the preceding section, and overlap them to some extent.

[12] Floyd W. Reeves. "Financial Standards for Accrediting Colleges (A Committee Report)." *The North Central Association Quarterly*, Vol. II, No. 4, March, 1928, p. 375.
Also Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence*. Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, September, 1929, p. 33.

[13] Cf. Henry Noble Sherwood. *Value of Rural School Supervision*. Educational Bulletin No. 84, State of Indiana, Department of Public Instruction, Indianapolis, 1926, pp. 8-13.

Over-departmentalization. The first type of inefficiency to be pointed out in the organization of the subject-matter offerings of colleges is an over-extension of the number of separate departments. There is a feeling of pride apparent in the catalog statement that "the College offers work in twenty-five distinct departments." The number of departments apparently is presumed to be an indication of the breadth of the offerings of the institution. As a matter of fact, one needs the experience of only a few surveys to prove that great confusion exists in the minds of most college executives regarding the constitution of a "department." The term is usually held to be loosely synonomous with "field of study"; but administratively the organization of departments may differ widely from the list announced in the catalog. For example, the catalog may announce work in such departments as French, Spanish, and German; but administratively there may be a single department of foreign languages with one department head responsible for the three different fields of study.

The regional standardizing associations have themselves added confusion to the departmental status by the general requirement, for purposes of accreditation, that instruction be offered in a minimum number of departments (usually eight) with department heads (whose training should be the equivalent of a Ph.D. degree) in charge of each.[14] In a small college struggling to meet standards for accreditation, this frequently means the addition of one or two "departments." The addition is usually merely a matter of catalog arrangement and faculty titles, and may involve little or no change in the actual offerings of the institution.

There is a distinct tendency today toward the unification and integration of subject matter at the undergraduate level, with a consequent lessening of the sharpness of the boundaries between fields of study. Many colleges are regrouping their "departments" into a few related fields, with the entire subject-matter offerings of the institution grouped into from four to eight divisions.[15] The college which today makes a point of the large number of different departments offering work gives unmistakable evidence of a lack of modernness in its curriculum organization.

Over-expansion in number of departments is uneconomical because of the problem of staffing that is involved. The regional standardizing associations insist that each "department" shall have a head, and the recommendation is made that department heads have training equivalent to the Ph.D. degree.[16] Institutions which fail to meet this standard in a large number of their departments (and most institutions with a large number of departments do not meet the standard) are looked upon with some suspicion. Colleges with limited funds which conscientiously try to

[14] William A. Cook. *Op. cit.*, p. 377.

[15] Floyd W. Reeves. "Critical and Constructive Suggestions from Surveys of Higher Education." *Pennsylvania School Journal*, Vol. LXXVIII, No. 7, March, 1930, p. 405.

[16] William A. Cook. *Op. cit.*, p. 377.

Also "Standards for Accredited Institutions of Higher Education." *The North Central Association Quarterly*, Vol. V, No. 1, June, 1930, p. 73.

meet the standard find that the maintenance of an excessive number of departments imposes an intolerable burden upon the salary budget.

Conceivably, if the recommended standard is met, the larger the number of departments in a college the better trained its faculty and the better its program. Under such circumstances the expansion in number of departments results in no direct waste. Actually what usually happens under conditions of limited salary budget and over-departmentalization is the employment of a considerable number of faculty members whose training may be quantitatively satisfactory, but who are willing to accept a relatively low salary because they are otherwise poorly qualified for college teaching.

Indirectly, however, an expansion in number of departments, even when accompanied by the provision of an adequately trained and well qualified staff, is very likely to result in inefficiency. The new department has ambitions to grow. The number of course offerings is increased. Soon the president is asked to add an instructor to the department, ostensibly to take care of the necessary course offerings, but not infrequently to satisfy the ambition of the department head to be the "head" of something more than merely himself. Almost invariably an unduly large number of departments is found in a college having an unreasonably large proportion of small classes, and it seems highly probable that there is some connection between these two conditions.

In summary on this point it may be said that over-expansion of number of departments is educationally inefficient when it blocks the way to the desirable curriculum reorganization of instituting divisions covering large fields of study; it is financially uneconomical principally because it tends to encourage the development of a large number of small classes.

Over-expanded course offerings. The second type of inefficiency frequently observed in the organization of subject-matter offerings is an over-expansion in the course offerings. In most colleges the number of courses to be offered in any department is usually left for determination by the head of that department, subject to the limitations of the number of staff members furnished him and the regulations with respect to maximum and minimum teaching loads. The procedure for increasing the offerings of a department usually involves consent on the part of the president to supply additional assistance to the teaching staff. Department heads whose influence with the president is strong are able to build up their offerings. Not infrequently the president betrays a bias toward his own field of specialization.

In colleges in which there is a curriculum committee of the faculty that is expected to pass upon all proposed new courses, it is usual to find that this committee pays attention only to the "academic respectability" of the proposed offering, and almost never views the new course from the angle of its contribution to the curriculum needs of the institution. Most of the curriculum committees the writer has observed seem to expect to give perfunctory approval to every course presented for their consideration by faculty members whose work is considered of a satisfactory academic standard.

TABLE III. TOTAL NUMBER OF SEMESTER HOURS OF CREDIT COURSES OFFERED, AND NUMBER OF FIELDS IN WHICH COURSES ARE OFFERED, FOR THIRTY-SEVEN COLLEGES

College number	Total number of semester hours of credit courses offered	Number of fields in which courses are offered	Number of students enrolled
1	1,523	24	1,831
2	1,303	23	1,442
3	1,286	26	673
4	1,034	24	799
5	1,000	24	839
6	983	25	782
7	952	22	573
8	946	22	324
9	941	24	668
10	926	24	658
11	910	24	752
12	845	22	599
13	844	22	421
14	825	24	422
15	824	23	641
16	822	23	621
17	815	25	536
18	801	25	546
19	799	26	557
20	777	25	455
21	748	22	354
22	712	24	528
23	664	21	437
24	660	20	347
25	645	20	505
26	643	20	303
27	636	20	199
28	629	23	570
29	628	20	267
30	619	21	425
31	606	20	240
32	569	21	261
33	551	20	162
34	515	21	365
35	462	19	135
36	414	19	114
37	366	15	204
Median	799	22	505

Table III presents data from thirty-seven colleges regarding the total number of semester hours of course work offered, according to catalogs current at the time of the survey visit in each institution. In this table courses that were offered in several sections were counted only once. Courses given only in summer sessions were not included. The work in music, art, and physical education was not included in the tabulation, since much of this instruction is not given on the usual credit-hour basis in many institutions. The data show the maximum amount of credit a student might obtain by taking all the courses offered by each of the colleges. The table also indicates the number of fields of study in which courses are offered by each institution. For purposes of reference, the enrolment of each college is given for the year in which the courses were advertised.

Altho all of these thirty-seven institutions were primarily four-year colleges of liberal arts at the time of collecting the data, a wide range is noted in the amount of their course offerings. In one of the strongest and best equipped institutions of the group only a little more than 600 semester hours of course work are offered in total; five of the colleges offer 1,000 hours or more. Two of the five having the largest total offerings are unaccredited by their regional standardizing associations. There is a marked tendency for total course offerings to be related positively to the size of the student body; the coefficient of correlation (Pearson) between enrolment and course offerings is $+ .88 \pm .03$.

It will be observed that, altho the colleges vary widely in the total amount of offerings, there is not nearly so wide a range in the number of fields in which courses are offered. There are only three colleges offering work in less than twenty fields, and none that has more than twenty-six fields represented in the course offerings. It is therefore apparent that the variation in total number of semester hours of credit offered is very largely a matter of expansion within subject-matter fields rather than of additions of whole new fields to the list of offerings.

Table IV presents data showing the median and range of semester hours of course offerings for each field of study generally represented in the curriculums of these colleges.

It is evident from this table that no common standard exists for the development of any of these fields of study. The extreme range in course offerings is very large in the case of almost every subject commonly offered, and even the inter-quartile range is rather large in most cases. The detailed data from which this table was compiled indicate that even in the smallest and weakest colleges of the group there are usually one or more fields in which the offerings are above the median. An analysis of the titles and content of the courses offered in each field would doubtless reveal even more clearly than is done by Table IV the need for an agreement upon some central core of subject matter for the offerings of the liberal arts college.

Tables III and IV offer the opportunity for many interesting observations that would be only indirectly related to the problem of efficiency of college management. It is clear that no standard is now available to indicate the number of courses that should be offered in a

TABLE IV. MEDIAN AND RANGE OF SEMESTER HOURS OF COURSE OFFERINGS IN TWENTY-FIVE SUBJECTS AT THIRTY-SEVEN COLLEGES

Subject	Median number of semester hours offered	Largest number of semester hours offered	Upper 25 per cent of semester hours offered	Lower 25 per cent of semester hours offered	Smallest number of semester hours offered
Total offerings	799	1,523	941	628	366
English	62	150	90	51	27
Economics and business administration	54	127	73	34	4
Biology	49	155	67	36	25
Chemistry	49	92	62	39	32
Education	45	168	66	33	17
Mathematics	40	159	52	36	21
French	40	68	48	34	18
History	38	90	55	32	21
Latin	38	73	48	27	6
Bible and religion	35	145	46	25	12
German	33	66	42	24	0
Physics	33	55	44	16	8
Speech and dramatics	27	89	39	20	4
Spanish	24	66	40	16	0
Home economics	22	52	41	0	0
Sociology	20	64	31	10	0
Political science	18	66	32	10	0
Greek	18	50	30	14	0
Philosophy	17	55	27	12	0
Psychology	13	49	25	9	6
Geology	6	44	24	0	0
Journalism	6	34	12	2	0
Astronomy	3	21	6	0	0
Engineering	0	167	11	0	0
Italian	0	22	0	0	0

given field at the undergraduate level. In most colleges the matter is decided by such eventualities as presidential whims and fancies, departmental aggressiveness, and the division of the spoils in the battle of the budget.

The over-expansion of course offerings has two important implications for educational efficiency. The first is that the inevitable result of an over-expanded offering is the giving of highly specialized and technical courses to groups of undergraduates who have little need of them and poor preparation for them. Educationally this is not sound procedure. It is rather generally conceded today that the first two years of the college curriculum should be devoted to the completion of general education, and that only in the upper two years should

specialization be introduced.[17] Even at the senior college level the specialization probably should not be too narrow. Multiplication of course offerings is apt to increase the opportunity for over-specialization and consequent loss of breadth of training in the undergraduate curriculum.

The second implication for educational efficiency of over-expansion of course offerings is the resultant increase in number of small classes. Assuming that the enrolment of the college is held constant, any increase in the total number of courses offered at one time is certain to reduce the average size of class. If the program of offerings by the department to which the course is added is already large, the additional course will appeal to only a limited number of students. The students who elect the new course are drawn from other courses whose enrolment is thereby reduced; the result of the addition of one new course is frequently an increase, not of one, but of two or three or four in the number of small classes.

It must be admitted that occasionally there are circumstances under which the offering of a new course is desirable. In case an old course is dropped when the new one is added, no increase in offerings is involved. Sometimes alternation of course offerings is introduced, thus avoiding the tendency to increase the number of small classes; the program of the student, however, is still likely to suffer from over-specialization. Sometimes the introduction of an entirely new field of study, for example, business administration, may be worked out in such a way that there is a new student group ready to enter the classes. If this means an actual increase in the total enrolment of the college, it involves no waste; if it means merely a shift of interest on the part of students who would have taken other subjects, the administrator needs to be on the watch for other divisions of the college in which corresponding reductions in offerings may be made.

The attempt to provide specialized offerings for small groups of students is one of the most serious obstacles to efficiency in the small college. As one college president has expressed it to the writer, "If two or three prospects are encountered, while soliciting students, who say they are interested in preparing to become funeral directors, the temptation is to announce immediately the offering of a course in embalming." This temptation reaches its peak, perhaps, when students who have completed two or three years of work in the college begin to bring into the picture their preferences for special fields of study, with the threat to leave for some other college or university offering the desired subject unless their wishes are met. Such students should be advised, even urged, to transfer if they are sincere in the desire to

[17] Leonard V. Koos. "The Junior College." In *Higher Education in America* (Raymond A. Kent, ed.). Ginn and Company, Boston, 1930, pp. 23-4.

Also Floyd W. Reeves. "The Junior College Curriculum in Colleges and Universities." In *The Junior College Curriculum* (William S. Gray, ed.). The University of Chicago Press, Chicago, 1929, Chapter VI.

Also Ernest H. Wilkins. "The College Curriculum." In *Higher Education in America* (Raymond A. Kent, ed.). Ginn and Company, Boston, 1930, Chapter XIV.

Also Ernest H. Wilkins. *The Changing College*. The University of Chicago Press, Chicago, 1927, pp. 19 ff.

follow a type of specialization which the college they are attending does not offer. Few or none of the greatest universities of the country make any claim to offer every subject that a student might conceivably want; yet the presidents of some small colleges feel greatly mortified if their curriculums do not provide, like a modern department store, everything for which anyone could possibly ask.

Economical administration demands that the college determine what fields of specialization it will offer and that its courses of study remain rigidly within these limits. Students should be sought in the first place whose interests lie along the same lines as those emphasized in the college. Students who develop other and different interests from those that the college is prepared to serve should be encouraged to transfer to another institution. The giving of a multitude of highly specialized courses to meet the real or fancied needs of very small groups of students is a type of educational inefficiency which the careful administrator will avoid.

The question may well be raised as to whether or not this dictum is likely to make the institution less responsible to outside demands upon its curriculum, and to result in a crystallized course of study that eventually will become unsuited to the needs of a dynamic society. Such a question is, of course, debatable. In the opinion of the writer, the unfortunate results suggested are not necessarily sequential to the plan of avoiding the offering of types of specialization in which only a limited number of students seem to be interested.

In the first place, if there is any considerable social pressure for the introduction of new fields of study, the condition will be attested, not by very small groups of students, but by relatively large numbers who desire the work. Nothing in the suggestion made above advises a refusal to offer new types of work to relatively large groups of students.

In the second place, granting that some important types of specialization need only a few followers, there is reason to believe that college administrators, either consciously or not, could agree to divide up these fields, each institution in a given area developing one or two specialized lines, so that the numbers of students may be sufficiently large to justify the giving of the work. Such a plan has been worked out among certain summer schools. Unconsciously, perhaps, the development of really outstanding graduate work in most fields has followed a somewhat similar pattern. Apparently there will be for many years in the future a sufficient number of educational institutions so that if each develops only one line of specialization of limited appeal, local needs for practically every type of training will be adequately met.

In the third place, it may be pointed out that the development of new and untried academic fields, while important for the avoidance of crystallization in the curriculum, is scarcely the function of an institution with limited funds. A college with ample funds can afford to experiment, can afford even to be wasteful in its experimentation. A college with limited revenues owes to its constituency the largest possible immediate educational returns for every dollar expended. Such a program leaves little room for expensive educational experimentation. The trying out of new fields of undergraduate study, vitally necessary to

maintain the closest adaptation of curricular content to social needs, is a function for the well-supported college and university rather than for the typical institution of limited resources.

In view of these considerations, it does not appear probable that a universal decision by presidents of colleges to limit their offerings to fields in which the demand is important enough to provide reasonably large classes will in any way lessen the adaptation of the curriculum to social needs.

In summary on this point, it may be said that, while there is an educational inefficiency involved in providing too high a degree of specialization for undergraduate students, the principal manner in which direct financial waste is involved is thru the increase in the number of small classes.

Overlapping of course content. The third type of inefficiency involved in the organization of subject-matter offerings is the overlapping of the content of supposedly different courses. The existence of this overlapping is recognized by most college executives. This matter is not capable of statistical presentation by any techniques now available, and the amount of waste involved would be only a conjecture. Some repetition is perhaps desirable; the point where necessary review stops and undesirable overlapping begins is difficult to determine in almost every field. It is manifest, however, that to teach the same topic oftener in the curriculum of a given student than is necessary for thoro learning is wasteful of the time of the student, and that the total funds of the college do not produce as great an educational return as they would if the overlapping were avoided.

One of the important ways in which this type of inefficiency is manifested is in the lack of articulation among the various units of the curriculum followed by a given student. Advanced courses are not infrequently given without adequate analysis of the content of the elementary courses that have preceded them. Courses in one department may be built upon prerequisites in another department without satisfactory articulation.

Articulation between the college curriculum and the high school program carried by the student is being increasingly provided,[18] altho in many institutions there is still a considerable educational waste at this point.[19] For example, a few years ago it was typical to find a blanket requirement of so many "credits" in foreign language for graduation from college. This requirement applied alike to all students, regardless of the amount of high school language presented for entrance. During recent years the language requirements of a large number of colleges have been modified so that account is taken of the high school language presented for entrance. In fields other than foreign languages

[18] Floyd W. Reeves. "The Junior College Curriculum in Colleges and Universities." In *The Junior College Curriculum* (William S. Gray, ed.). The University of Chicago Press, Chicago, 1929. Chapter VI.

Cf. also Frederick J. Kelly. *The American Arts College.* The Macmillan Company, New York, 1925, pp. 32-5.

[19] Leonard V. Koos. *Op. cit.*, pp. 17-18.

articulation between the high school and college programs is less evident. Thus, as a general rule, the same number of "credits" in social science are required for graduation, regardless of the amount of high school work taken in this field.

Failure to articulate the high school and college programs of students is undoubtedly an educational waste; whether or not a financial inefficiency is also involved appears debatable. If actual repetition is avoided, the principal effect seems to be an unbalancing of the program of the individual student, rather than the giving of fewer total "information units" than the funds expended would allow. If balance as well as quantity of education be considered a product of efficient management, then a failure in curriculum articulation should be interpreted as uneconomical administration.

Provision of Instructional Supplies and Equipment

There is a third opportunity for inefficiency in the purely instructional function, which arises in connection with the provision of instructional supplies and equipment. It is obvious that the provision of such materials in greater quantities than needed would be a waste. Instances of this type are rare; in fact most colleges err in the opposite direction and fail to provide instructional supplies and equipment in amounts adequate for the highest instructional efficiency. The writer can point out from his survey experience only two examples of this type of inefficiency, both of which are specific. Each was found in only one college.

One institution recently surveyed had a short time previously taken over all the physical equipment of a large university that had closed its doors. As a result the stock of laboratory equipment in all of the sciences was far in excess of the needs of the small college. The administrative authorities of the institution were well aware of this fact, and were merely holding the equipment until an opportunity could be found to dispose of it advantageously.

The second example was found in the case of a professor of American history whose classroom was visited. Here was found one of the most complete collections of projection apparatus ever seen by the writer in a single classroom. Some eight or ten different pieces were included, such as projectoscopes, reflectoscopes, stereopticons, and moving picture projectors, all of them bought from the funds of the college. On the instructor's desk was an imposing array of electric switches and push-buttons, connecting with the various pieces of projection equipment. One would have supposed that this collection of equipment indicated one of the very superior teachers of the college; as a matter of fact there was universal testimony from students and academic administrative officers that this particular professor was in no sense a superior teacher. He merely had a penchant for playing with projecting apparatus, and the college indulged him in his hobby by buying every new device that struck his fancy. This was a clear, tho unusual, case of waste of funds on instructional equipment, since one or two pieces of projecting apparatus should certainly have been ample for an ordinary classroom.

Library

A fourth opportunity for inefficiency in the provision of instructional service is in library operation and maintenance. Most colleges with which the writer is familiar spend too little, rather than too much, on the maintenance of the library. Direct waste on account of excessive expenditure for this service is decidedly unusual. There does not appear to be any type of inefficient use of funds in library service sufficiently common to justify discussion.

Summary

Three types of inefficiency have been discussed under the general heading of the instructional function. The first of these relates to the provision of the teaching personnel, the specific instances being: (1) too large a number of teachers employed; (2) loads assigned lighter than necessary; (3) inappropriate salaries (the conclusion being that it is a rare occurrence for salaries to be too high); (4) too large a number of small classes; and (5) inadequate provisions for the supervision of instruction. The second type of inefficiency considered under the instructional function relates to the organization of subject-matter offerings, centering in three sub-points: (1) too large a number of academic departments in the college; (2) over-expansion of departmental offerings; and (3) overlapping of courses in content, and failure to articulate the various units of the student's curriculum. The third type of inefficiency in the instructional function relates to the provision of instructional equipment. Most colleges provide too little, rather than too much, equipment. Library service, a fourth division of the instructional function, usually suffers from inadequate support; direct waste on account of excessive expenditure for library service is rare.

CHAPTER III

INEFFICIENCIES IN GENERAL ADMINISTRATION

In the literature of higher education the term "administration" has been somewhat loosely used and, rather unfortunately, has taken on certain meanings which broaden materially its scope over what is generally understood by the term in the business world. College financial accounting systems commonly use the heading "administration" as a catch-all for items of expenditure which cannot conveniently be classified under other headings. Arnett[1] is perhaps responsible for this tendency because of his suggestion for the classification "Administration and General." It should be clear that expenditures so diverse in kind as the salary of the president's secretary and the cost of the annual commencement exercises should not both be classified as "administration."

Not only does the term "administration" frequently cover many miscellaneous non-administrative items, but the base to which expenditure for administration is related in college accounting is scarcely comparable to that which is usually employed in the business world. The successful manufacturer on the college board of trustees is sometimes astounded to find that from 10 to 15 per cent of the total annual expenditure of the institution is devoted to administration; such an overhead in his manufacturing plant would be ruinous. The base upon which he computes his percentage of administrative overhead, usually total sales, is not at all comparable to the total expenditure of a college.

For these reasons it is important that the term "administration" receive accurate definition in any discussion of college efficiency.

In the present study the function of administration is defined as narrowly as possible. All activities that do not clearly have to do with the executive control of the institution are placed in some category more clearly descriptive of their real nature. Thus the personnel service is classified as student welfare; the management of dormitories and dining-halls is considered an expense chargeable to supplementary business activities; the expenses of managing the endowment fund are considered as a deduction from the net income of the fund; the direction of the strictly academic phases of the program, usually in the hands of the dean of the college, is classified as instruction. For the purposes of this analysis, the managing of the finances of the college is treated separately in a later chapter; in the table dealing with administrative expenditures, the expense of the financial management of the educational program is considered as a part of the administrative charge.

[1] Trevor Arnett. *College and University Finance.* General Education Board, New York, 1922, p. 75.

TABLE V. ADMINISTRATIVE EXPENDITURE PER STUDENT ENROLLED, PERCENTAGE OF TOTAL EDUCATIONAL EXPENDITURE FOR ADMINISTRATION, AND NUMBER OF STUDENTS ENROLLED, FOR THIRTY-FOUR COLLEGES

College number	Administrative expenditure per student enrolled	Percentage of total expenditure devoted to administration	Number of students enrolled
1	$64.65	23.0	210
2	62.72	21.1	151
3	56.58	14.5	396
4	55.13	15.5	353
5	54.61	19.0	381
6	52.63	23.8	128
7	49.36	17.9	397
8	47.56	14.0	323
9	45.79	12.6	595
10	43.94	14.9	480
11	42.03	15.5	306
12	40.15	15.4	326
13	39.90	15.5	336
14	39.88	11.0	440
15	39.16	11.9	545
16	38.54	11.3	497
17	36.84	13.5	563
18	35.76	13.7	545
19	35.50	13.2	461
20	35.37	10.4	729
21	33.95	12.5	252
22	30.63	12.4	191
23	30.19	15.8	616
24	29.37	15.5	227
25	29.30	9.3	781
26	28.94	13.5	897
27	28.15	10.9	752
28	27.50	11.5	512
29	27.16	12.9	694
30	26.65	17.3	892
31	26.14	8.4	1,785
32	23.53	8.0	1,385
33	23.13	7.8	655
34	20.81	10.0	651
Median	$36.30	13.5	489

Table V presents data showing for each of thirty-four colleges the expenditure for administration per student enrolled and the percentage of total educational expenditure devoted to the function of administration. For purposes of comparison, the average enrolment of each institution is also given. The figures in each case are for the fiscal year immediately preceding the date of the survey visit.

The expenditure for administration includes the cost of the president's office (salaries, supplies, and travel), the portion of the cost of the business office (salaries, supplies, and travel) which is chargeable to the educational program of the institution, and the cost of the registrar's office. This item does not include the expenditures of the business office occasioned by the operation of supplementary business enterprises, such as dormitories and dining-halls, and the cost of managing the endowment fund is also excluded.

This table exhibits a wide range of per capita expenditure for administrative purposes. A marked variation also exists in the percentage of total expenditure devoted to the function of administration. There is obviously some relationship between the size of the college and the per capita expenditure for administration. The coefficient of correlation (Pearson) between these two items is $-.58 \pm .08$. The percentage of total expenditure devoted to administration is slightly more closely related to total enrolment, the coefficient of correlation (Pearson) between these two items being $-.60 \pm .07$. Since these correlations lack much of being perfect, the indication is that some factor or factors other than the size of the enrolment are operating to produce these differences in per capita expenditure for administration.

The administrations represented in these colleges vary considerably in effectiveness. Some of the colleges were advised in the survey report to spend more money for administration; others are doubtless using funds ineffectively in providing administrative service. The situations under which a college needs to increase its expenditure for administration will not be discussed at this time, but attention will be given to some of the types of inefficiency which are to be found in providing for this function.

Size of the Administrative Staff

Data are given in Table VI regarding the kinds of administrative officers in the thirty-five colleges studied and the frequency of occurrence of each type of officer. The data are taken from the catalogs current at the time of the survey visit.

There is no single pattern of administrative organization that is common to a majority of these thirty-five institutions. The only officer that is listed for every institution is the president (in one case the chief executive has the title of chancellor). The business officer, under some one of his various titles, is represented in most of the institutions. The majority also have an academic dean as a part of the administrative organization listed in the catalog. A registrar is indicated for every institution except one. Almost all the colleges have an officer for the supervision of women students. These five, the president, business officer, dean, registrar, and dean of women, seem to be the minimum essentials of an administrative staff for any well-organized coeducational college. Beyond these officers there is a fringe of more or less accurately defined administrative positions that are found in some colleges and not in others.

It should be noted in passing that some of the officers listed in Table VI are not officers of administration as defined in this section;

TABLE VI. KINDS OF ADMINISTRATIVE OFFICERS LISTED IN THE CATALOGS OF THIRTY-FIVE COLLEGES

Kind of administrative officer	Percentage of thirty-five colleges having this officer	Number of different titles under which this officer is listed
Chief executive (president)	100	2
Vice-president	46	5
Dean (of college of liberal arts)	86	3
Registrar	97	7
Dean of women	88*	10
Dean of men	32†	6
Business officer	86	19
Superintendent of buildings and grounds	43	5
Financial promotion agent	20	7
Secretary to president	22	2

*One of the institutions is a men's college. The percentage having a dean of women is based on the thirty-four institutions that admit women students.

†One of the institutions is a women's college. The percentage having a dean of men is based on the thirty-four institutions that admit men students.

such positions as dean of men and dean of women usually are created to fulfill a function of student welfare rather than administration in the more strictly defined sense. Certain of the offices are sometimes non-salaried; the treasurer, as distinct from the business manager, for example, is frequently an officer of the board of trustees who acts as nominal custodian of the funds and serves without salary. In some colleges, however, the treasurer draws a salary.

There is a wide variation in the number of administrative officers in the colleges studied.[2] Two institutions each list more than twenty-five officers; one lists only four, and four colleges list only five officers. The median number of officers for the entire group of colleges is eleven; half of the colleges have more than eight and less than fourteen administrative officers. The variation in the number of administrative officers raises the question as to why some colleges need a larger staff for administrative service than others. The size of the enrolment may, of course, be expected to influence the size of the administrative staff. A few of the other factors will be briefly mentioned.

In the first place, the data given above are based on the catalog listings of administrative officers. Certain positions, for example, the secretary to the president, are listed by some colleges and not by others. Altho the fact of an office being listed in the catalog is some indication of its importance in the institution, variation in the custom of listing may account for a part of the difference in the number of officers found in the various colleges.

[2] The following types of employees have not been classified as "administrative officers," even tho so listed in the college catalog: secretarial assistants (other than the secretary to the president), health officers and nurses, librarians and library assistants, dormitory matrons (except when serving as dean of women), janitors, Y.M.C.A. and Y.W.C.A. secretaries.

In the second place, the data do not indicate the number of administrative officers in terms of full-time service. Thus in most of the institutions represented in this study the dean teaches one or more classes; in some of the colleges the president also devotes a portion of his time to instructional service. A complete analysis of this problem would demand the computation of the number of administrative staff members on a full-time basis in order to determine the exact size of the staff. Accurate data relating to the proportion of their full time which the several officers devote to administrative service were not available in the present study.

In the third place, there has been no complete "job analysis" of the various detailed duties which constitute the task of administering a four-year college. Some of these colleges are probably leaving undone some important administrative duties that other colleges are performing; others are doubtless performing administrative functions which are unnecessary. The preparation of a "minimum essentials" list of administrative jobs for a four-year college would be an important contribution to the study of efficiency in college management. The present study does not enter into this question.

In the fourth place, there appears in college administration a tendency to assign duties in terms of personal capabilities rather than in accordance with a predetermined list of executive functions. Thus the exact duties performed by the registrar in one college will differ markedly from those in another college.[3] This is probably as it should be, but it is a condition that seriously disturbs any careful analysis of the number of individuals who need to be concerned with administrative activities in a college. For example, in a college surveyed some time ago, the dean was an elderly gentleman entirely out of touch with modern educational trends. Because of his long association with the college it was thought unwise to dismiss him from his deanship, and in the normal course of events he would be scheduled for retirement two or three years later. In the meantime, in order to carry on the work of the college effectively, it was necessary to name certain other officers to take charge of the duties which the dean did not care to assume. A glance at the administrative organization of this college would indicate that it was overstaffed in administrative positions. Yet the survey staff was of the opinion that good judgment had been shown in avoiding any attempt to force on the dean a pattern of duties for which he did not care and for which he was poorly prepared.

Such conditions make it almost impossible to draw conclusions from the available data regarding the exact number of administrative officers that should be provided in a given college. Any tendency toward overstaffing will probably be reflected in an excessive expenditure for administrative purposes. An effort to reduce the expenditure for this function should start with a careful examination of the administrative organization, with a view to discovering possibilities for a reduction in number of officers.

It should be pointed out, however, that the small college is almost certain to be overstaffed with administrative officers, when compared with

[3] F. B. O'Rear. *The Duties of the Registrar.* Bulletin of the Southwest Missouri State Teachers College, Springfield, Missouri, Vol. XXI, No. 1, 1926, p. 89.

larger institutions. The fact that there is a minimum essential list of administrative officers indicates that every college, regardless of its size, must have these officers. Opportunities for assigning other than administrative duties to such officers are not always available. Furthermore, a considerable number of the administrative duties are in no way related to the size of the college, and must be performed whether the institution is large or small. It appears that this is an unavoidable type of inefficiency in institutions having a relatively small enrolment.

Administrative Salaries

It is obvious that the payment of a salary in excess of the real value of an individual's services to the institution is a direct waste of funds. Not infrequently faculty members are found who look rather enviously at the disparity between their own salaries and that of the president, with at least a vague idea that the difference constitutes an ineffective use of funds. It is worth while to examine this point, in an effort to determine the extent to which inefficiency is commonly introduced on account of excessive payments for administrative salaries, particularly the salary of the president.

In practically every institution of higher learning that has risen to a position of eminence, either local or national, there is a history of good administration. Some one president or series of presidents is in large part responsible for the excellent standing of almost every one of the better colleges of the country today.[4] Similarly in most of the once-flourishing colleges whose continued existence is today questionable there is often a history of ineffective and short-sighted administrators. A strong and able administration is practically a *sine qua non* of an effective college; and to obtain this usually involves a relatively large outlay for the salary of the chief administrative officer. In nearly every case the college which cannot afford to pay for good administration is ready to pass out of existence.

Thwing[5] suggests that the salary of the president should be approximately "double the typical salary of the regular teacher of permanent tenure." If by "typical salary" is meant the average salary, it is the writer's opinion that double this amount will often fail to provide an adequate salary for the chief executive. Permanent tenure usually is extended to all holding the rank of professor and associate professor and in some colleges assistant professors are also included. In many well-organized colleges and universities today there are some professors who receive salaries of more than twice the average paid faculty members who hold permanent tenure. A salary for the president double the average salary for the rank of professor would not be excessive in most colleges today. As Thwing points out in this same connection, the salary of the president is for a twelve-month period, while that for the faculty member is usually for a nine-month year of service. In the colleges studied, the average salary for the presidents is 2.15 times the average salary of faculty members holding the rank of professor.

[4] Cf. Charles Franklin Thwing. *The College President.* The Macmillan Company, New York, 1926, pp. 229-30.

[5] Charles Franklin Thwing. *Op cit.*, p. 214.

The ratio of faculty salary level to the president's salary should clearly be related to the size and wealth of the institution. In a college in which instructional salaries are at a level below that which allows a comfortable living, the salary of the president cannot properly exceed the average for faculty members as far as would be the case in a college having ample funds for the payment of satisfactory salaries to its instructors. There is a fairly marked tendency to relate the size of the president's salary to total enrolment. In the thirty-four colleges studied the coefficient of correlation (Pearson) between salary of the president and total enrolment is $+.58 \pm .08$.

The large disparity between his own salary and that of the president should provide the envious faculty member one of the surest guarantees not only of the future permanence of the college with which he is connected, but also of the future probability of larger funds for faculty salaries.

Altho the salary of the president is usually the largest single item of expenditure for administrative purposes, it has almost no relationship to the per capita expenditures for this function. Computation of the coefficient of correlation (Pearson) between the salary of the president and the expenditure per student for administration in the thirty-four colleges for which data were available results in a figure of $+.03 \pm .11$. The tendency to vary the president's salary in accordance with the size of the total enrolment is in large part responsible for the lack of agreement between the president's salary and the per capita expenditure for administration.

These data lead to the conclusion that, assuming the capabilities of the president are not out of line with the amount of his salary, the payment of a high salary to this officer cannot be criticized adversely on the ground of inefficiency, provided the total expenditure per student for the function of administration is not excessive. The question of what constitutes an excessive expenditure per student for administrative purposes will be discussed in a later section. Even a salary which raises the total expenditure for administration to an excessive figure may be justifiable as a temporary expedient in order to revive a moribund institution. Such an expenditure should be considered as an unavoidable type of inefficiency, or possibly as an atonement for previous failures to provide an adequate administration.

Clerical Help

Most college presidents who have held such a position for a quarter of a century or more can recall the days when clerical help for the administrative staff was almost non-existent. That the introduction of clerical help has resulted in much greater efficiency cannot be doubted. However, there appears to be no standard by which the amount of clerical help necessary for a college of a given size can be gauged.[6] There is obviously the possibility of overstaffing in clerical positions, altho, in the

[6] For a study of this type in the field of public school administration, see John Dale Russell. "The Clerical Assistant to the Superintendent of City Schools." *The American School Board Journal*, Vol. LXX, No. 3, March, 1925, p. 51.

observation of the writer, this type of inefficiency is not common. In the survey of a large university now in progress, a careful study has been made of the clerical help in certain of the administrative offices. This study has resulted in a reduction of expenditure for this item in some of the offices surveyed. In most of the smaller colleges with which the writer is familiar, too little rather than too much clerical help is provided. Any tendency toward clerical overstaffing will be reflected in an excessive expenditure for administrative purposes.

General Efficiency of Office Management

Closely related to the problem of overstaffing is that of the general efficiency of the clerical force. Anyone familiar with standard office practice would be impressed with the lack of efficiency in the clerical staffs of many colleges, particularly those located in small cities and semi-rural towns. It is not unusual to find office hours short and irregularly kept, and the work going on at a generally low pressure. Equipment is frequently inadequate and poorly arranged.

Some colleges follow the practice of using students for clerical jobs in the administrative offices. The wisdom of this plan is open to question, not only because of the doubtful efficiency of this class of help generally, but also because of the confidential nature of the information which these assistants must handle.

In the ordinary small college the savings that might be effected by increased office efficiency would not be large. From the standpoint of the effect on visitors to the college, however, the elimination of waste in office management is important. Inefficiency in this detail is much more noticeable, particularly if the visitor be a business man of large means familiar with standard office practices, than are most of the other types of inefficiency that are more important in terms of total expenditure. The effect on such a visitor, frequently a potential donor to the institution, of the observation of wasteful and ineffective office practices is decidedly unfavorable.

The presence of this type of inefficiency will be reflected in excessive costs for administrative purposes. As previously stated, its detection is relatively easy; its elimination is a problem for the expert in office management rather than for the educator.

Summary

Administration is a function which needs accurate definition. For the purposes of this study the narrowest possible definition has been chosen. This chapter is concerned only with general administration, the inefficiencies connected with financial management being reserved for the following chapter. Four types of inefficiency have been suggested as possible in the function of general administration: (1) a larger administrative staff than is necessary; (2) excessive administrative salaries, altho the argument is made that this item usually involves no wasteful expenditure; (3) a larger clerical staff than necessary; and (4) inefficiency in office management.

CHAPTER IV

INEFFICIENCIES IN FINANCIAL ADMINISTRATION

FOR the purposes of this discussion the topic of financial administration has been somewhat arbitrarily separated from the general function of administration. Several types of inefficiency are frequently encountered in the administration of the finances of an educational institution.

Productivity of Endowment

All of the colleges from which data were collected for this study depend to some extent upon income from endowment as a source of support. They are thus representative of a large group of American institutions known as the endowed colleges in contradistinction to those which are tax-supported. Since the endowed colleges are dependent in some measure upon income from invested funds as a source of support, it becomes important to examine the productivity of the endowment. A management which is producing less than should be expected from the invested funds is clearly lacking in efficiency.

Arnett[1] has suggested two tests for the management of an endowment fund: (1) conservation of the capital of the fund; and (2) rate of income from the fund. Many colleges have had unfortunate experiences with the management of their endowment funds and have suffered losses in their investments. In one college recently surveyed the endowment was conservatively appraised some ten years ago at a figure in excess of $2,000,000. Thru a single unfortunate investment the assets of this fund were reduced to $750,000. In another college recently surveyed, the endowment which was reported seven years ago at $750,000 has shrunk to approximately $150,000 in net assets.

A few years ago many colleges were following what was at that time considered sound investment advice and were investing the bulk of their funds in farm mortgages.[2] The recent depression in farm values has caused large numbers of these mortgages to be defaulted, with the result that colleges have had to take possession of the farms. Most of these institutions have not as yet faced squarely the question as to the amount of shrinkage in these assets which they will eventually find it necessary to absorb. Farms are being carried in the hope of realizing out of them at least the amount of the mortgage investment, altho in many cases this is a forlorn hope. In the meantime the funds are in frozen assets and are producing practically no income. It is the belief of many who have studied the situation that most of these colleges will find the capital

[1] Trevor Arnett. *Op. cit.*, p. 32.
[2] Trevor Arnett. *Op. cit.*, p. 33.

of their endowment funds greatly reduced when they finally liquidate the assets that are tied up in farm property.

The loss of endowment assets is a serious blow to the college, not only because of the curtailment of one of the major sources of income, but also because the confidence of potential donors is seriously shaken. Those who have large funds to give usually prefer to place them with an institution having a record of good management, rather than with one the history of which indicates that there is strong probability of the dissipation of the gift. A certain college that has recently suffered a large loss in its endowment is now facing a very serious struggle to avoid closing. If the institution is to survive, it must raise immediately several hundred thousand dollars. The president of this college has stated to the writer that the task of raising this fund seems almost hopeless. Altho the institution has "cleaned house" in its financial management, and has taken steps to prevent the probability of losses in the future, several large gifts that are in the offing are being postponed pending assurance of the future of the college. There is a very strong probability that this institution will pass out of existence before it can receive the necessary financial assistance.

Dissipation of capital assets is, from some points of view, a more heinous offense than a waste of current funds. It behooves the college to watch carefully the investment of endowment funds to be certain that ample provision is made for the safety of the principal.

The writer is aware of the fact that there is today a distinct trend among important philanthropists away from the creation of perpetuities.[3] In recent years a number of large trusts have been created for specific objects under conditions that require the expending of the principal of the gift as well as the income from its investment. Some writers have even gone so far as to recommend that colleges should avoid the setting up of perpetual endowments, and should instead seek large funds the capital of which is subject to expenditure at the discretion of the trustees. Whatever may be the final opinion regarding this matter, the facts are that most of the endowment funds at present held by colleges have been given under conditions which stipulate that the fund shall be perpetual. In order to keep faith with the donors who have provided such funds, boards of trustees must take every precaution to insure the perpetuity of their endowment funds.

It is axiomatic that the purpose behind the maintenance of an endowment fund is the production of an income. While safety of principal must come first, a satisfactory income is equally necessary before a fund can be said to be well managed. In order to provide reasonable safety for the principal of the fund, the rate of income must not be expected to exceed that provided by conservative investments.

Table VII shows the rates of return received on the endowment investments of thirty-four colleges.

A conservative investment policy will probably forbid the expectation of a rate of return in excess of 6 per cent. It will be noted from Table VII that half of these colleges are obtaining 5 per cent or more on

[3] Julius Rosenwald. "The Trend Away from Perpetuities." *The Atlantic Monthly*, Vol. CXLVI, No. 6, December, 1930, p. 741.

TABLE VII. RATES OF RETURN ON INVESTED FUNDS OF THIRTY-FOUR COLLEGES

Rates of income	Number of colleges	Total amount of invested funds of these colleges
6.0 or more	6	$5,001,269.52
5.5—5.9	3	7,350,077.78
5.0—5.4	8	7,920,790.18
4.5—4.9	3	3,189,067.56
4.0—4.4	3	1,772,221.55
3.5—3.9	3	2,470,213.96
3.0—3.4	2	2,608,876.57
2.5—2.9	3	5,624,352.94
Less than 2.5	3	1,073,070.39

their invested funds. Others are getting less than half the rate that should be expected. As previously mentioned, a low rate of return is due in many instances to ownership of farm lands received thru mortgage foreclosures, and may, in the last analysis, indicate a present over-capitalization of these assets.

In some of the colleges represented in Table VII, the loss of income from this source is large. If all these institutions were obtaining at least the rate of 5 per cent on their funds, the total income of the thirty-four colleges would be increased by more than a quarter of a million dollars. This is a fair estimate of the amount of loss due to the ineffective management of these funds in the colleges for which data are presented. In order to avoid this type of waste, a college needs to avail itself of the best possible investment advice. Methods of handling the endowment fund so as to obtain a greater productivity have been discussed by Reeves and Russell.[4]

Effective management will result not only in the receipt of a satisfactory rate of income and in the conservation of the capital of the fund, but also, during normal economic conditions, in actual increases in the capital thru appreciation of investment assets. Many institutions overlook this important item in the management of their endowment funds. In the hands of a capable investment expert the fund can be made to show rather substantial increases over a period of years thru judicious changes in the assets held. The actual amount of loss thru failure to realize an appreciation in the assets held is difficult to determine. Until statistics are available from a large number of well-managed funds showing the history of increases from this source, a conservative estimate cannot be made regarding the amount of appreciation that should be expected in a well-managed trust fund.

[4] Floyd W. Reeves and John Dale Russell. *College Organization and Administration.* Board of Education, Disciples of Christ, Indianapolis, 1929, pp. 260-6.

Investment of Current Cash[5]

The normal fiscal history of a school year is somewhat as follows. At the opening of the first semester in the autumn and again at the opening of the second semester in February, student fees for the respective terms are collected in cash. Endowment income, church contributions, and other gifts are usually received at more or less regular intervals thruout the year. Expenditures are made as bills are received and as salaries fall due, usually about the first of each month. Thus, in the progress of this fiscal cycle, the college has a large amount of cash on hand just before the payment of salaries on October first. The amount of cash on hand dwindles with each successive salary payment period until it is again replenished by the receipt of the second semester fees, and again the process of reducing the balance begins, with enough left at the end of the academic year to tide over the comparatively light expenditures of the summer months (assuming faculty salaries to be paid in nine or ten monthly installments).

In the working out of this normal cycle, it is apparent that the college would have an average daily cash balance equal to approximately 25 per cent of the total annual income. Even in a small college this would amount to a rather substantial sum, and its wise investment could be made to produce a considerable amount of income. The investment must be in short term paper, with maturities to correspond fairly closely to the known dates of heavy drain on the college funds (usually the first of the month). The rate of return which can be expected on short term investments of this sort depends on the condition of the money market. The arrangements for handling the investment of current cash can probably best be left to the bank in which the funds are kept. Frequently a depository interest rate can be arranged for on the daily balances.

Most of the colleges which the writer has surveyed obtain no income whatsoever from this source. However, one college with an alert business manager was found to be obtaining approximately $6,000 annually from the investment of its current cash. The failure to obtain an income from this potentially important source must be construed as ineffective management. A few of the conditions that contribute to the failure to receive income from this source will be discussed.

Small cash balances. Perhaps the reason most frequently given by colleges for failure even to study the question of the investment of current cash is that there is no current cash to invest. A college executive who with great difficulty manages to scrape together enough cash to meet the necessary salary payments on the first of each month does not need to worry about the investment of current cash. Such a hand-to-mouth policy of financing is all too typical of many smaller endowed colleges. Thus, instead of the normal annual fiscal cycle described in the preceding paragraphs, the cycle is shortened to the salary payment period, and the energies of the administrative staff are devoted to the gathering of resources from month to month so that faculty members may have their salaries when due or shortly thereafter. Instead of maintaining a current cash balance equal to the theoretical 25 per cent

[5] The writer is indebted to Mr. H. C. Gregg for the original suggestion of many of the ideas contained in this and the two subsequent sections.

of total annual income, the balance tends to approach zero and frequently becomes a minus quantity—an overdraft carried by an obliging local bank. Under such circumstances a request for the payment of depository interest is absurd.

The case which has just been described is, of course, an extreme, as is also the case of the college with the theoretical average daily balance equal to 25 per cent of its total annual expenditure. Between these two extremes lie the majority of the colleges with which the writer is familiar. The executives of most such colleges have never given a thought to the investment of their current cash, and are somewhat surprised to discover that, even tho the average daily balance is not large, they have been neglecting a source of income which might have added upwards of a thousand dollars to the annual revenues of the institution.

Poor fee collection system. A second reason for failure to obtain an income from depository balances lies in the fee collection policy of the colleges. Many institutions do not follow the policy of insisting strictly that students pay fees in advance at the opening of the semester or term. Where delay in payment of fees is allowed, it is clear that the daily cash balance of the college is smaller than it would be if a strict policy of collection in advance were followed. The question of losses in the collection of student fees will be discussed later in this chapter. It should be pointed out in the present connection, however, that one of the effects of a lenient fee collection policy is a reduction in the potential income from daily cash balances.

Lack of coöperation from local banks. A third reason frequently given by colleges for failure to obtain an income from daily cash balances is lack of coöperation from local banks. It is customary for a college to keep its checking account in a local bank, usually in the city in which the institution is located. If the city is relatively small, with only a limited number of banks, an organized refusal to pay depository interest will frequently be encountered. Under such circumstances the college should not consider itself obligated to keep its account with any local bank. It is comparatively easy in most instances to arrange with a bank in some large city of the region to carry the account, and such banks are usually willing to pay depository interest on a profitable account.

The college executive who has the courage to move the checking account out of town, from motives of the best interest of the institution, must count on facing a certain amount of bitter local criticism. The answer to this criticism is that the fault is with the local banks which have failed to serve the college, rather than with the college which has refused to patronize local business institutions.

It is frequently found that an officer in one of the local banks has been appointed treasurer of the college, without salary. In such cases the position is sometimes taken that the bank is entitled to whatever profit it can make from the checking account of the college, without the payment of depository interest, because of the service which the treasurer renders. A careful analysis of this service usually reveals the fact that it involves little more than a nominal responsibility. Furthermore, a calculation of the earnings that might reasonably be expected from the current balances will usually indicate that the college has been paying

an exorbitantly high rate for the little service that has been rendered. It will usually be found much cheaper to employ directly the bookkeeping assistance needed, instead of making an indefinite contribution for this service thru the loss of the depository interest.

It is very common to find one or more of the local bankers on the board of trustees of a college. One can suspect that there is oftentimes some connection between this fact and the failure of the college to collect depository interest. In one institution recently surveyed, a local banker on the board of trustees admitted to the survey staff that he did not retain his membership on the board out of any great love for or interest in the affairs of the college, but primarily in order to obtain a profitable account for his bank. When the suggestion was made to him that the survey report might recommend an effort to obtain depository interest on the current balances, his answer was that he would fight such a recommendation to the utmost of his ability. The writer has no means of knowing how common such a condition is. Obviously, a trustee whose principal interest in the affairs of the college is the obtaining of a profitable account for his bank should be replaced on the board at the very earliest opportunity.

Failure to realize an income from the investment of current funds may be either an avoidable or an unavoidable type of inefficiency. If the college is always so hard-pressed to meet current bills and salary payments that its daily cash balance is too small for profitable investment, the loss of income from depository balances is unavoidable, and may be considered as a necessary evil accompanying hand-to-mouth financing. If, on the other hand, the college actually has a reasonably large average daily balance and is failing to make it productive, the administration should be charged with an avoidable type of inefficiency.

Purchasing

Most colleges are not doing their purchasing as effectively as they might. This rather sweeping generalization is supported by experience in almost every college surveyed. A capable purchasing agent, who has recently been a member of a staff engaged in surveying a group of colleges, has been able in almost every institution visited to point out uneconomical methods of purchasing, and to make suggestions for improvements in this service that will mean large savings to the colleges.

Effective purchasing today may almost be termed a science of its own. The person charged with this responsibility needs to have had special training for this work, and should be using every effort to keep up to date in his knowledge of prices and sources. Colleges generally are failing to have available on their business staff some person specifically trained in methods of purchasing, to whom this responsibility can be assigned. The college business manager, as typically found in the smaller institutions, has usually had no training in purchasing, and all too frequently has had only a limited practical experience in this work before taking up his duties with the college. With the development of college and university courses in business administration, men with definite training for purchasing are becoming increasingly available.

In seeking to employ a new business manager, a college will do well to specify training for purchasing as one of the essential qualifications.

Ineffective purchasing is not always due solely to lack of a trained personnel for this responsibility. In many colleges the function of purchasing is greatly decentralized. It is not uncommon to find the football coach ordering the athletic supplies, the manager of the dining-hall doing the buying for this unit, and the various members of the faculty ordering supplies as the needs arise in their departments, without consulting the college business office. Such a procedure almost certainly results in inefficient purchasing. Everything is to be gained and nothing is to be lost by completely centralizing in capable hands the function of purchasing.

College executives are frequently found to have a feeling that a large portion of their buying must be done locally, regardless of the quality of the local market or the prices which must be paid. The college that adopts the policy of always buying where it can get the lowest prices, quality considered, is certain to meet a considerable amount of criticism from the local merchants. This criticism is relatively easy to answer if there is a courageous insistence that it is the business of the college to get the most it can for its money. Local merchants usually do not like to face publicity to the effect that their prices are too high.

Occasionally a college may face embarrassment because a gift received from a local merchant in the course of a financial campaign may carry the implied obligation of the college to give this merchant a share of its purchasing. Such a gift may prove unprofitable for the college. One who is actuated in his giving by such a mercenary spirit is apt to be shrewd in his calculations of probable returns from the gift. In the long run the college may be better off without the gift, retaining the right to purchase where prices are lowest.

The topic of purchasing is worthy of a much more extended treatment. It may be noted that inefficiency in this function will in general be reflected in a relatively high cost for the articles purchased. So far as the strictly educational program is concerned, the principal items will be those used in the operation of the physical plant, including coal and janitorial supplies. Instructional supplies will also be included, but these form a relatively minor part of the budget in the average college.

Failure to Take Discounts

Closely associated with the topic of efficiency in purchasing is that of the taking of discounts in the payment of bills. It is surprising to note the number of colleges which fail to pay bills with sufficient promptness to earn the usual discount for cash. It should be a settled part of the financial policy of the college to discount every bill, and the whole financing and accounting structure should be bent to this end. In case a college is in straitened financial circumstances and lacks the funds with which to pay bills in time to take the discount, the loss from this source may be considered unavoidable. In other cases there is no excuse for failure to take cash discounts.

The accounting systems of many colleges do not permit the calculation of the amount of discount taken during the year, discount being simply

considered as a deduction from the face of the invoice, and the entry of the item in the accounts being a net amount, the face of the invoice less discount. In order to be able to call particular attention to this item, it is well to carry at least a memorandum account which will reveal the amount of discount taken during the year. In standard accounting practice discount is treated as an actual item of income.

Collection of Student Fees

Arnett[6] has given a forceful treatment to the topic of the collection of student fees. The effectiveness of the fee collection system varies among colleges. In a few of those recently surveyed there is an iron-clad rule that every student shall make settlement for his tuition on the day of registration. Worthy cases in which a postponement of payment is necessary are treated on a strictly business basis, a promissory note being taken, and collection being made in full before the student is allowed to take the final examinations for the semester or term in question. In other colleges the greatest leniency is allowed students in the postponement of fee payments. The privilege of postponement is granted upon request, without any serious inquiry as to the merits of the case. Students who seem to have enough money to pay their fraternity dues are allowed to postpone the payment of their college fees.

A faulty fee collection system involves several different types of financial inefficiency. Perhaps the most important is the loss that comes thru failure ever to collect some of the fees due. The records of many colleges show that thousands of dollars have been charged off the books annually due to "bad debts," consisting mainly of student fees which were never collected. This is a direct loss that can be entirely avoided without great difficulty.

A second inefficiency involved in a faulty fee collection system is the labor involved in keeping accounts with the unpaid fees. Many colleges still maintain a "student ledger," a wholly useless piece of accounting machinery, in which an account is kept with every student, the amount of the fees assessed against him, and the amounts of the payments he has made on fees. The labor necessary to maintain the student ledger varies directly with the size of the institution and with the leniency of the fee collection system. If students are allowed to pay fees in installments, each separate payment requires an amount of accounting labor equivalent to the total which would be required under a system whereby each student pays in full and in cash on the day of registration. With the latter system the student ledger can be entirely dispensed with. In a college of 500 or more students this will eliminate a large percentage of all the accounting work.

A third type of inefficiency involved in a faulty fee collection system has already been pointed out in connection with the topic of investment of current cash balances. If fees are not paid in full at the beginning of each semester, the average daily balance of the college is reduced and the opportunities for an income from this source are correspondingly lessened.

[6] Trevor Arnett. *Op. cit.*, p. 13.

Perhaps even more serious than the financial losses involved in a faulty fee collection system is the poor business training that is given students. A college which inculcates the idea that financial obligations are unimportant and need not be met promptly is rendering a doubtful service to its students. On the other hand, a college that expects its students to meet their obligations promptly is giving a valuable training for later experience in business life.

Payment of Interest

A college which is not carrying a burden of debt is today decidedly atypical. Despite a generally professed agreement on the part of college presidents with Arnett's dictum[7] to the effect that "colleges will do well to restrict their operations to such activities as they can afford," most of the institutions with which the writer is familiar have at some time or another in the past decade been led to incur obligations which were to be discharged in later years. There may be some peculiar justification for having incurred indebtedness in recent years, while enrolments were increasing much more rapidly than the resources with which to meet the needs. Under such circumstances colleges have found it necessary to expand their plants, and all too frequently have allowed deficits to occur in their current operating budgets, resulting in a burden of debt which requires a serious struggle to liquidate.

The carrying of a debt imposes a grave burden, not only because of the necessity of raising funds for the eventual liquidation of the principal, but also because of the interest charges which must be met each year. Interest charges are inescapable after the debt has been incurred, and must take precedence over all other obligations if the institution is to remain solvent. The educational program of the college, being a more flexible item than debt service, inevitably suffers a reduction of support by the amount which is necessary to meet the interest payments.

It may perhaps be argued that the provision of new capital assets in the form of college buildings is a justifiable excuse for the incurring of a debt, the argument being that interest charges are an economic cost, whether the new building is paid for in cash or in debentures of some sort. The writer does not disagree with this point of view. The experience of most colleges has been, however, that in the practical situation the current program of the institution pays the interest charges if the building is built with borrowed funds, while if the cash is available before the building is undertaken, the current program does not suffer by reason of the deduction of interest charges.

The piling up of debt for other than capital purposes does not have even a theoretical justification. The pay-as-you-go policy in handling the current budget is the only way by which operating deficits and their concomitant burden of debt may be avoided. The payment of interest charges is a direct waste of funds which it should always be possible to avoid by careful administration of the finances of the college.

[7] Trevor Arnett. *Op. cit.*, p. 49.

Carrying of Annuity Contracts

The writing of annuity contracts offers an effective and, if properly safeguarded, a thoroly sound method of building up the assets of a college. Unfortunately many colleges have been led into annuity campaigns that have been disastrous to the finances of the institutions. Several of the pitfalls which must be avoided in an annuity program will be briefly discussed.[8]

Perhaps the most frequent error made in taking annuities is in the figuring of rates. Actuarial tables now available afford a satisfactory basis for rate making. Colleges which professedly are following these tables in assigning their rates are often found to be figuring incorrectly the rate on joint annuities. The life expectancy on a joint (double or triple) annuity is greater than that on a single life at the age of the younger; many colleges are found not to be taking this fact into account in fixing their rates.

A second error is in the over-appraisal of assets delivered in return for an annuity. Colleges have in the past frequently taken farms for annuities without a careful estimation of the value of the assets delivered. In one case the agent of a college, unusually successful in obtaining annuity gifts, was found by the survey staff to have followed the practice of offering to write up the value of property considerably in order to tempt the prospective donor to part with it in return for an annuity. It is needless to say that under such circumstances the annuity rates paid are entirely out of line with standard rates. If assets other than cash are delivered in return for an annuity, they should always be conservatively appraised.

A third error is the failure to provide a fund for carrying the excess of annuity interest payments over and above the earnings of the invested funds. One college surveyed some time ago had launched an intensive annuity campaign only a few years previous to the survey. The campaign was successful, and the total of annuities written was large. Without giving the matter much thought, interest payments on the annuities, over and above earnings on the invested assets, were made from current funds. The result was a serious deficit in the current operating budget, since the cost of carrying the annuities had not been anticipated. At the time of the survey the annuity payments were so burdensome as to embarrass most seriously the current operations of the college.

Before an annuity campaign is launched by a college, some plan should be worked out for the carrying of the costs of the program until the annuities mature. There are several possible plans. In some colleges the excess of annuity interest payments over the earnings of the invested assets are paid from the capital of the fund itself. When an annuity matures, the residue only is made available for the purposes for which

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[8] For a further treatment of this topic, see Alfred Williams Anthony, ed. *Annuity Agreements of Charitable Organizations.* Abbott Press and Mortimer-Walling, Inc., New York, 1927.

See also Alfred Williams Anthony, ed. *Annuity Agreements, Methods and Plans of Charitable Organizations.* Mortimer and Walling, Inc., New York, 1931.

the annuity was specified. The actuarial tables in general use are based on the presumption of a 70 per cent net residue.[9]

Some colleges follow the plan of not writing an annuity contract for a rate higher than can be obtained by a conservative investment of the assets delivered. Under such circumstances the rates will be materially lower than those allowed by the tables which are figured on the basis of a 70 per cent net residue, and difficulty is frequently experienced in inducing donors to make annuity agreements at such rates. Furthermore, there are certain management charges which are almost never figured against the produce of the fund,[10] and these must eventually come out of the current budget unless proper allocation is made in the accounting.

Some colleges follow a third plan of obtaining a carrying fund by some special gift, which is used to absorb the difference between annuity interest payments and the earnings of the fund. When an annuity matures, the fund may be replenished and only the net residue turned over to the specified object for which the gift was originally designated.

A fourth plan followed by some colleges is the selling of the annuity contracts to an insurance company. Since the insurance company can profitably carry the annuity on the basis of a net residue much smaller than 70 per cent, it is possible to transfer the contract and release immediately for the uses of the college a relatively large proportion of the original gift. Such a plan should be followed only with the express consent of the donor.

The important point in the carrying of an annuity program is to prevent any burden on the current operating budget of the college. In the view of affairs which encompasses only the single fiscal year, annuity payments from current funds are clearly a non-effective expenditure, since they produce nothing of immediate tangible value to the educational program of the institution. While it must be admitted that in the long run funds invested in the carrying of annuities are a wise expenditure (provided the rates are conservatively figured), to take these funds from the current budget may seriously hamper the immediate educational program. In some cases colleges have been forced almost to bankruptcy before annuities began to mature in any appreciable volume.

Financial Promotion

Most endowed colleges find it neccesary to keep one or more persons engaged in the task of fund raising. This is usually one of the chief burdens of the president in the small college, but frequently other individuals are employed whose sole business it is to raise funds.

It is almost impossible to collect accurate data that would throw light on the question of inefficiencies in the system of financial promotion. The program must always be a long-time affair; its success cannot be judged by the results of a single fiscal year. It is the impression of the writer, however, that many colleges are not obtaining a fair return for the outlays they are making in financial promotion.

[9] Alfred Williams Anthony, ed. *Annuity Agreements of Charitable Organizations.* Abbott Press and Mortimer-Walling, Inc., New York, 1927, p. 46.

[10] Alfred Williams Anthony. *Op. cit.*, p. 47.

In some colleges the expenses of financial promotion are a charge against the current budget. In institutions where the program has been given most careful consideration, however, the stipulation is usually made a part of the contract with the promotional agent that he must in each fiscal year obtain in free, undesignated gifts a sum sufficient to cover the entire expenses of his office and salary. Under such conditions the program of financial promotion does not become a charge against the current budget. In one or two colleges special gifts have been received, before setting up the program, in an amount large enough to carry the charges of the promotional office until it has a chance to become self-sustaining.

As stated above, the writer has no criteria to offer by which the productivity of the promotional office may be tested in a short span of time. The expenses of this office should be considered a non-educational charge in the budget of the college, and, if paid out of current funds, would appear in the accounting only as a reduction of the amount available for strictly educational purposes.

Summary

Eight points have been suggested at which inefficiencies occur in the financial administration of a college. These are: (1) failure to realize a satisfactory rate of return on endowment; (2) failure to realize a return on the investment of current cash balances; (3) uneconomical methods of purchasing; (4) failure to take cash discounts on bills; (5) poor systems of student fee collection; (6) payment of interest charges on indebtedness; (7) payments from current funds for the carrying of annuity contracts; and (8) uneconomical financial promotion programs.

CHAPTER V

INEFFICIENCIES IN THE OPERATION AND MAINTENANCE OF THE PHYSICAL PLANT

THE expenditures necessary for the operation and maintenance of the physical plant form a considerable item in the college budget. Table VIII presents data regarding the expenditure per student for this function in each of thirty-four colleges, together with the percentage which expenditures for this item are of the total budget for strictly educational purposes.

There is evident in this table a wide range both in the amount and in the proportion of total expenditure devoted to operation and maintenance of the physical plant. One institution spends for this item only $10.56 per student enrolled; another spends $61.21. The range in the percentages of total expenditure devoted to this function is not so wide, but is large nevertheless.

There is apparently very little tendency either for the expenditure per student for operation and maintenance of the physical plant or for the proportion of total expenditure devoted to this function to be associated with the size of the institution. The coefficient of correlation (Pearson) between expenditure per student for this function and total enrolment is $-.01 \pm .12$. The coefficient of correlation (Pearson) between percentage of total educational expenditure devoted to this function and total enrolment is $-.04 \pm .12$.

Since expenditure for plant operation and maintenance has no apparent relation to the size of the enrolment, the wide range in costs for this item may indicate a variation in efficiency of management. It seems entirely probable that some of the colleges shown in Table VIII are spending more money than should be necessary for this function; it is also probable that some are spending less than they should, particularly on the function of maintenance.

In college accounting, expenditures for maintenance are not usually separated from those for building operation. Most colleges which have anything like an up-to-date accounting system are following Arnett's classification,[1] which unfortunately does not provide for such a separation. To separate expenditures for building operation from those for maintenance would have been a laborious task in each of the analyses made. Furthermore, the degree of arbitrary judgment that it would have been necessary to exercise would have rendered such a separation little better than a guess. For that reason operation and maintenance have been considered in this discussion as a single item, altho each is really a distinct and easily recognizable function.

Certain of the inefficiencies in building operation and maintenance that have been observed in the course of surveys will be discussed.

[1] Trevor Arnett. *Op. cit.*, pp. 75-8.

TABLE VIII. EXPENDITURE PER STUDENT FOR OPERATION AND MAINTENANCE OF THE PHYSICAL PLANT, PERCENTAGE OF TOTAL EDUCATIONAL EXPENDITURE FOR THIS PURPOSE, AND NUMBER OF STUDENTS ENROLLED, FOR THIRTY-FOUR COLLEGES

College number	Expenditure per student for operation and maintenance of plant	Percentage of total expenditure devoted to operation and maintenance of plant	Number of students enrolled
1	$61.21	18.8	545
2	61.09	16.7	440
3	57.92	16.0	595
4	49.58	12.7	396
5	48.89	16.7	1,385
6	45.77	13.4	497
7	42.61	14.7	655
8	41.29	15.5	461
9	41.10	12.1	323
10	40.59	15.5	326
11	39.58	12.5	781
12	39.00	15.8	191
13	38.82	17.6	128
14	38.81	15.0	336
15	38.79	14.2	563
16	38.27	14.8	752
17	37.55	12.8	480
18	37.28	12.1	1,785
19	36.70	17.7	651
20	35.05	13.0	306
21	34.97	10.3	729
22	33.54	11.6	381
23	32.91	17.5	227
24	32.79	9.1	353
25	32.15	12.3	545
26	28.99	10.6	397
27	28.60	10.2	210
28	27.51	9.3	151
29	25.16	9.2	252
30	23.80	9.9	512
31	23.65	11.3	694
32	23.47	10.9	897
33	15.67	8.2	616
34	10.56	7.0	892
Median	$37.42	12.8	489

Utilization of Space

Colleges vary considerably in the degree to which they utilize the space provided in their academic plants. Data have been collected regarding the extent to which the classroom and laboratory space of twenty-three colleges is utilized. No study has been made of the utilization of other types of space, since data are not readily available concerning the use of other building facilities. In most colleges more of the space used for academic purposes is devoted to classroom and laboratory facilities than to any other one use.

The method of computation of the utilization of classroom and laboratory space is as follows: For each of the classrooms at a given college a complete schedule of use was obtained, showing the periods during which the room was occupied and the number of students in each class occupying the room. Computation was then made of the percentage of the total possible periods which each room was used and also of the percentage of the total possible capacity of each room which was utilized. In making these computations it was assumed that it would be possible to occupy each room a maximum of forty-four periods per week, since many colleges actually do operate on a schedule of forty-four periods per week. Thus for a given room the number of periods it is actually in use during the week divided by forty-four gives the percentage of the possible periods utilized.

In computing the percentage of the total possible capacity utilized it was assumed not only that the room could be used forty-four periods of the week, but that it would be theoretically possible to fill every seat during each of these forty-four periods. Such utilization would result in a figure of 100 per cent. While it is recognized that in practice a utilization of 100 per cent is impossible, a comparison of the actual utilization with the theoretical standard affords an interesting index of the needs for additional academic space.

Table IX presents data for twenty-three colleges regarding the percentage of total possible periods which classrooms are used, the percentage of the total possible capacity which is used, and the number of student-stations provided per student enrolled. A student-station is defined as the accommodation necessary for one student, e.g., one seat in a recitation room, one laboratory desk, or one chair in a lecture room.

It should be stated, in connection with Table IX, that in the case of every institution except one the survey staff concurred in the judgment that ample classroom space was available and made recommendation against the provision of additional space for classroom purposes. The single exception was college Number 9, which, altho its percentage of utilization is not particularly high, has converted into classrooms and laboratories much space that is entirely unsuitable for those purposes. In several colleges recommendation was made for the replacement of space now used, because of its unsatisfactory condition. If all the classroom space in each of these twenty-three colleges had been of good quality, none of them would have been considered by the survey staff to be in need of additional space. While the exact percentage of utilization at which crowding begins has not been determined, it is probably

TABLE IX. USE OF INSTRUCTIONAL SPACE AT TWENTY-THREE COLLEGES

College number	Percentage of total possible periods used*	Percentage of total possible capacity used*	Ratio of student-stations to average enrolment
1	42.8	22.9	1.5
2	40.7	13.5	1.7
3	40.3	21.6	1.7
4	39.8	22.5	1.8
5	39.2	11.0	3.6
6	38.5	19.8	1.9
7	37.9	17.0	2.2
8	37.4	†	1.3
9	36.7	17.5	1.7
10	36.5	19.3	2.1
11	36.4	16.8	2.1
12	36.4	15.4	3.0
13	35.6	16.0	2.4
14	35.3	15.0	2.1
15	32.9	18.1	2.3
16	30.9	18.8	2.1
17	30.6	18.4	2.3
18	28.6	18.3	2.4
19	28.4	13.5	2.0
20	28.0	23.0	†
21	27.0	12.0	3.6
22	24.4	12.7	3.0
23	17.1	7.0	†
Median	36.4	17.3	2.1

*A forty-four period week is used as a standard.
†Data not obtained.

not below the figure of 25 per cent utilization of total possible capacity.

When the number of student-stations provided per student enrolled is considered, a wide range is again found. It is evident, for example, that if colleges Numbers 1 and 8 have adequate provision for their present enrolments, colleges Numbers 5 and 21 are decidedly overbuilt.

Inefficiencies resulting from low utilization of space. The ways in which poor utilization of space (or an over-expanded plant) result in non-effective use of funds will be briefly discussed.

The first inefficiency is the higher operating costs that are incurred in the over-expanded plant. Most of the costs of operation are probably related rather directly to the number of square feet or cubic feet of plant space. The institution that provides an excessive amount of academic space per student must heat every cubic foot and must clean every square foot of that extra space. Thus, other things being equal, the college with the largest space provisions per student will have the highest cost of plant operation per student.

A second inefficiency incurred in an over-expanded plant is the increased costs of building maintenance per student. The argument in this case is exactly the same as in the case of operation costs. The extra building space must be kept decorated and repaired, and to a considerable extent costs for this function are related to the amount of building space. Maintenance is also related, however, to the degree of use, so that maintenance costs are probably not as nearly in proportion to the size of the plant as are building operation costs.

The third inefficiency incurred in an over-expanded plant is the increased cost of insurance. Protection against fire must be carried on the extra space provided, and these costs soon reach a large total.

The fourth inefficiency incurred in an over-expanded plant is the increased economic cost, consisting of depreciation and interest on the investment in the extra plant space. It is not customary in college accounting to figure in an economic cost. Interest may be disregarded because the funds with which the buildings were erected were probably a gift in the first place and no expectation of an interest return was stipulated. Depreciation may be disregarded if it is expected that, when the building is worn out, another gift will be forthcoming for its replacement. Whatever justification there may be for the omission of the item of economic cost from the accounting set-up, it certainly should be figured in the final cost of educating a student. The provision of classroom space in an excessive amount usually increases the plant investment per student, and thus results in a larger economic cost per student than would otherwise be the case.

The fifth inefficiency incurred in this connection is in reality the practical working out of the previously mentioned type. The presence of an overbuilt physical plant usually indicates that gifts which might have been diverted into the endowment fund have been used for buildings. The writer recognizes the fact that it is usually easier to persuade givers to provide funds for a building (particularly if the donor's name is to be attached in some way) than it is to induce contributors to give to the endowment fund of the college. It must be recognized at the same time that a donor who has the best interests of the institution at heart is in most instances willing to listen to sound advice regarding its most pressing needs. The one who makes contact with the donor on behalf of the college usually has some opportunity to direct the gift into the channels which he deems most important. To allow a donor to make a gift for a little needed building when he might be persuaded to give instead to the endowment fund is a serious mistake. The results are a double loss to the educational program, for not only must the college budget stand the strain of the operating and maintenance costs of the extra space, but there is at the same time a failure to realize a potential increase in the endowment fund.

An institution recently visited illustrates in an excellent manner the mistakes of misdirected fund seeking. This institution (it bears the title of "University") is not a member of the regional accrediting association, and, in fact, has had a difficult time even to keep on the accredited list for teacher training in the state in which it is located. There is almost no endowment, and faculty salaries are relatively low.

This "University" has the general reputation of being a low-grade institution. It was somewhat surprising, therefore, in visiting the institution to find a large plant, with several recently constructed buildings. While many of the buildings had been poorly planned and were not well adapted to the needs of the institution, there was an amount of space large enough for an enrolment at least three times the size of the present student body.

Upon inquiry the information was given that a former president had followed the policy of diverting every possible gift to plant purposes. This president had been out of sympathy with modern educational standards and had neither endeavored to accumulate an endowment fund nor sought support in other forms for the educational program. All his efforts had gone into obtaining funds for the erection of buildings. Large debts were incurred in the building program because the gifts obtained were usually somewhat smaller than necessary to finance the cost of the new construction. As a result of this unwise policy, the institution today is on the verge of both educational and financial bankruptcy, and heroic efforts will be necessary to save it from extinction. There is a fair chance that the institution may be forced to close, leaving the extensive buildings as a hollow mockery of the unwise policy of the former chief executive, who chose to erect buildings rather than to accumulate endowment. It was estimated that, if the funds which had been invested in unneeded buildings had been placed in endowment, there would have been an amount of ample size to assure the future of the institution.

The question may well be raised as to whether there is a corresponding gain in the excellence of the educational program that may be attributable to the provision of excessive plant space per student. It is conceivable that, when too little space is provided, i.e., when crowded conditions prevail, the educational program will suffer. For example, if the science laboratories are not large enough to accommodate all who wish to take courses in science, the elections of students being thereby distorted, it may well be considered that the educational program would benefit by an increased space provision. It must be borne in mind, however, that the present study deals with total space per student, and not space for any one subject or department. It is a fair assumption, for example, that, if the chemistry laboratories are badly crowded while the general percentage of utilization is low, the condition could be relieved by a reassignment of space and the fitting up of additional laboratories without in any way increasing the total space available.

In a large institution, such as a university, there are possibly some advantages in having all the work of a given school or department located in the same building. Frequently the following of such a policy will reduce the utilization of space, because provision must be made for enough classrooms to carry the schedule during the hours of peak loads. In a large percentage of the colleges under consideration in this study, such a problem does not arise. The academic work in most of these institutions is centered in one or two buildings, and the problem of transferring the work of a department outside the "main" building rarely arises.

A final answer to the question of the educational value of providing excessive plant space per student cannot be given from the objective data considered in this study. It is the judgment of the writer and his colleagues who have surveyed these colleges that within the limits of utilization observed there has been neither advantage nor handicap to the educational program due to the greater or the smaller provision of space. Far more important than the amount of room is the quality of the space available.

Conditions causing crowding. The question may be raised as to what causes produce a condition of apparent crowding, even tho the percentage of utilization remains low. A few of the conditions which militate against a high degree of utilization will be discussed.

The first condition is a short academic week in the official schedule of the college. It will be remembered that a week of forty-four class periods was used as the standard in computing the percentage of utilization; many colleges actually operate on such a schedule. Some colleges, however, have a policy of scheduling all recitation and lecture classes during the morning hours, the reasons usually given being that the afternoon hours in the students' schedules are needed for laboratory work and football practice. This assumed need is utterly disproved by the experience of numerous colleges and universities which have no difficulty in arranging an all-day program.

The second condition contributing to poor utilization is the failure, in constructing buildings, to adapt the schedule of room sizes to the distribution of sizes of classes. In most new academic buildings it is customary to find all the classrooms of the same size, a plan similar to that of an elementary school. A study of the distribution of size of classes in the college would indicate that a considerable proportion of small rooms should be provided, seating fifteen or twenty students. Rarely is a room of such size seen in a modern classroom building in an undergraduate college. The result is that the classes of ten or fifteen students occupy rooms that were planned to accommodate forty or fifty, and the utilization is accordingly low.

At the other end of the scale there is usually an equally serious failure to provide a sufficient number of large classrooms seating from seventy-five to one hundred or more students. In view of the recent studies of class size at the University of Minnesota[2] it seems probable that colleges will soon desire to introduce the policy of maintaining at least a few fairly large class sections. In order to do this some building alterations will be necessary in many colleges. While the failure to provide large classrooms does not reduce the percentage of utilization, it does contribute to the feeling of crowding, especially when the administration is searching frantically for two or three rooms large enough to hold a few good-sized sections.

A third condition contributing to low utilization of space is the assignment of classrooms to faculty members for office purposes. In many small colleges it is typical to find the name of the professor on the door of "his" classroom. During the periods when his classes are scheduled he teaches them in this room; during the vacant periods on

[2] Earl Hudelson. *Op. cit.*

his schedule he remains at his desk in the room for study and for conference with students. As a result, no classes other than his own can be scheduled in the room. Under this plan one classroom must be provided for each member of the faculty. A full teaching schedule would utilize the room only twelve or fifteen periods per week, or at best approximately 34 per cent of the possible forty-four periods in the week. The remedy for this condition is the provision of instructional offices for faculty members, with the adoption of the policy of scheduling classes of the various instructors in rooms that are most convenient, no faculty member having the privilege of calling any classroom his own to the exclusion of other members of the instructional staff.

A fourth condition contributing to low utilization is the policy of assigning rooms to departments for their exclusive use, with the understanding that no other department may have the use of the space so assigned. This condition is closely akin to the one described in the preceding paragraph. The plan has merit in the case of the sciences and other subjects in which a considerable bulk of instructional material is used in the classroom exercises. It is sometimes necessary for instructors to arrange apparatus in advance of the meeting of their classes. If the room in which the class is scheduled to meet is in use during the period immediately preceding, difficulty may be experienced in arranging the materials needed. This is a matter, however, which can be taken care of by allotting the necessary preparation periods in the same manner as the recitation periods are scheduled.

Methods of increasing utilization of space. In a given plant it is possible to increase the utilization of space by one of two methods: (1) increasing the enrolment of the college without increasing the plant space; (2) actually reducing the amount of classroom space by abandoning whole buildings or parts of buildings in such a way that operation and maintenance costs are reduced. A third way might be thru increasing the average number of hours spent in the classrooms by students, such as, for example, the putting of recitation classes on a laboratory basis. Since this is a curricular matter and would be adopted, if at all, from motives other than that of increasing the utilization of plant space, it need not be given consideration under this heading.

The opportunities for increasing the utilization of space in a given plant are comparatively small. The most important method of avoiding the inefficiency due to low utilization of space is to refrain from adding to the classroom and laboratory facilities unless there is a clearly demonstrated need for their extension.

Heating Costs

A second type of inefficiency in building operation is excessive costs for heating. Expenditure for fuel is the largest single item other than salaries appearing in the operating budget of most colleges. High heating costs may be due either to excessive fuel consumption, or to a high price per ton for coal, or to both. Table X presents data for twelve colleges showing the weight of coal consumed per student and the price paid per ton for coal. All of these institutions depend entirely on coal for heat-

ing. The data relate only to fuel consumption for the academic plant, dormitory heating costs having been excluded from the computations. All the data are for the academic year 1928-1929.

TABLE X. AMOUNT OF COAL CONSUMED IN ONE YEAR, PRICE PAID PER TON FOR COAL, AND ANNUAL COST OF FUEL PER STUDENT, FOR THE ACADEMIC PLANT IN TWELVE COLLEGES, 1928-1929

College number	Number of tons of coal used during year		Price paid per ton for coal	Annual cost per student for fuel
	Total	Per student		
1	551	1.39	$6.90	$9.59
2	900	1.81	4.96	8.98
3	325	1.70	5.04	8.57
4	1,000	1.44	5.78	8.32
5	700	1.28	5.71	7.31
6	960	1.23	5.70	7.01
7	900	1.38	4.60	6.35
8	850	1.43	4.16	5.95
9	507	1.33	3.56	4.73
10	160	.76	4.65	3.53
11	300	.76	3.50	2.66
12	180	.79	2.50	1.98
Median	625	1.35	$4.80	$6.68

It will be noted that there is a rather wide range in the amount of fuel consumed per student in these colleges. It has previously been suggested that the cost of heating is related to the amount of space enclosed by the buildings, rather than to the number of students served. The fact that the plants of these colleges vary considerably in the amount of space provided per student explains in part the variation in the figures for the different colleges. Four other factors affecting fuel consumption will be mentioned.

The first factor is the type of building construction. Buildings lacking vestibuled entrances, having ill-fitting doors and windows and unsatisfactory insulation against cold, will demand a greater amount of fuel, if the temperature is kept at seventy degrees, than will well-constructed buildings. The provision of thermostatic control should normally reduce the fuel consumption by eliminating overheating.

The second factor affecting fuel consumption is the general efficiency of the janitorial and engineering force. Reeves and Ganders[3] make the statement: "A fireman fully trained and experienced will save many times his salary in the economical use of fuel and in the protection of the plant from deterioration." Similarly the exercise of janitorial attention to such matters as the closing of windows in unoccupied rooms and the shutting off of heat from unused portions of buildings will decrease

[3] Charles Everand Reeves and Harry Stanley Ganders. *School Building Management.* Bureau of Publications, Teachers College, Columbia University, New York, 1928, p. 281.

the consumption of heat. Most of the colleges observed by the writer could reduce markedly the amount of fuel used, by giving adequate training to their janitorial and engineering force. The book by Reeves and Ganders from which quotation has just been made contains many profitable and practical suggestions along this line.

The third factor affecting the amount of fuel consumed is the type of heating plant. Many colleges have separate heating plants in each of their several buildings. The economy of a central heating plant is generally recognized. It so happens that each of the colleges for which data are presented in Table X has a central heating plant, so that this item is not a factor producing the variation shown. There are various types of heating equipment, each with its own degree of efficiency. The efficiency of the plant also depends upon the state of its repair. In a large university recently surveyed a new central heating plant had been installed the previous year under a contract to the effect that the cost of construction would be met by a yearly payment equal to the saving in fuel and labor costs over those of the old heating system. During the first year of operation approximately one-tenth of the entire cost of the construction of the new plant was saved. An engineering survey in the average college heating plant will usually reveal opportunity for reduction of fuel consumption by the installation of more efficient equipment.

The fourth factor affecting the amount of fuel consumed is the average temperature during the winter months. Other things being equal, colleges located in Minnesota and Wisconsin will need to provide more heat than those located in Tennessee and Kentucky. Location in a region with severe winters thus introduces an unavoidable high cost in the operation of the plant when the college is compared with one located in a warmer climate.

In addition to the factor of excessive fuel consumption, the price paid for coal plays an important part in the heating costs. The range of prices exhibited in Table X is produced by three principal factors: (1) quality of the fuel purchased; (2) distance from the mines; and (3) shrewdness in purchasing.

The data of Table X would be much more meaningful if expressed in terms of B. t. u.[4] Many colleges, however, fail to purchase coal in terms of any guaranteed analysis; or, having specified a given quality, fail to make the analysis to test the coal which is delivered. Almost every college in the country maintains a department of chemistry, and thus has available without extra cost all the facilities needed for testing the quality of coal delivered. Such a check is necessary to protect the interests of the college.

The amount of freight that must be paid on coal is a second factor affecting its delivered price. Colleges located at considerable distances from the mines are forced to pay a higher price per unit of delivered coal. This introduces an unavoidable high cost for fuel, due to the location of the institution. Some of the colleges for which data are given in Table X are located in the center of coal mining territory, and thus have the advantage of a considerably reduced price per ton.

[4] British thermal units.

The topic of purchasing has already been discussed in the chapter on financial administration. Since coal is one of the largest single items to be purchased during the course of the year, care in buying yields exceptionally high returns. As was previously stated, coal should always be bought on a guaranteed analysis, and both quantity and quality of deliveries should be carefully checked.

Cleaning Costs

One of the largest items in the expenditure for operation of buildings is the cost of cleaning. Most college accounting systems do not permit a separation of the costs for this item from those of the general function of operation and maintenance. Data cannot therefore be presented in this study to show the degree of variation in these costs. Since, however, there is obviously room for some waste owing to excessive cleaning costs, three of the commonly encountered types of inefficiency in this service will be discussed.

The type of building construction and the general condition of its repair have much to do with cleaning costs. A building having badly worn floors, or wooden floors with wide cracks, is harder to keep clean than one having new, tight floors. Similarly the type of blackboards has an effect upon the cost of cleaning; in general, slate blackboards are found to be more economical than those of any other material. Small window panes increase the cost of cleaning. Many items of this kind could be mentioned, which should be taken into account in planning new academic buildings or in renovating old ones.

A second condition making for waste in the cleaning of buildings is janitorial inefficiency. The entire discussion of this point by Reeves and Ganders[5] is equally as applicable to college buildings as to those of public school systems. In a recently completed survey[6] of a large university C. E. Reeves has contributed a chapter on plant management in which are pointed out numerous details for the improvement of janitorial efficiency. The suggestions are more largely concerned with the obtaining of better service than with the reducing of expenditure for this service, but either object means increased efficiency.

The Association of University and College Business Officers has recently adopted the standard of 20,000 square feet as the assignment for one janitor. In many of the smaller colleges the schedule of work makes it difficult to assign exactly the recommended amount; this results either in an overloading (with consequently poorer standards of cleaning) or a waste due to failure to carry a full load. In many of the colleges surveyed the executive in charge of buildings and grounds was found to have no adequate idea of the amount of space which a janitor should be expected to clean. The promulgation of this standard by the Association should result in a checking of conditions in many colleges and a readjustment of janitorial assignments.

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[5] *Op. cit.*, pp. 57-232.

[6] Unpublished manuscript, on file in the office of The Board of Education of the Methodist Episcopal Church, Chicago.

A third factor making for increased cleaning costs is the degree to which students coöperate in keeping the buildings and campus clean. Colleges vary markedly in this respect. A visit to some colleges reveals a campus littered with candy wrappers, newspapers, and loose sheets of notebook paper, obviously thrown there by students. In such a college a considerable amount of time would be required each day to clean the campus of waste paper. In other colleges students have a tradition of respect for the property, and refrain from scattering scraps of paper about the campus. The development of a student consciousness concerning such matters, both outside and inside the buildings, should result in decreasing the cost of cleaning.

Most colleges are not wasting any funds by over-scrupulous care in cleaning; rather, there is usually found a need for better attention to this work. Efforts to improve the efficiency of the cleaning service probably will not result in any direct saving of funds to the college, but should obtain better service for the money now expended.

Insurance

There are three principal ways in which wastes may occur in the provision of fire and tornado insurance on buildings. The first is thru the failure to carry adequate insurance; the second is thru the failure to carry an economical type of insurance; and the third is thru the failure to eliminate fire hazards which cause high insurance rates.

Several of the colleges recently visited carry fire insurance protection to the amount of less than half the value of the plant. To carry less than full protection simply means that the institution carries a large part of its own risk. This is a serious condition for two reasons. In the first place, the base of the risk is not sufficiently broad. In the second place, colleges which are under-insured almost invariably fail to put aside a reserve for losses. No college, and particularly no college in straitened financial circumstances, can afford to carry anything less than reasonably full insurance protection on its physical plant.

More than half of the colleges recently surveyed are carrying their fire insurance under the 80 per cent or 90 per cent coinsurance plan. This plan probably offers the maximum of protection at the minimum of cost. Colleges that are insured under any other plan would do well to investigate the 80 per cent or 90 per cent coinsurance plan. It is probable that the provision of insurance under any other plan is in reality to some extent an ineffective use of funds.

Insurance rates vary (presumably) with the degree of risk involved. By taking advantage of the suggestions made in an insurance inspection, it is frequently possible to remove a number of fire hazards and obtain a lower rate. This is a real economy, not only from the standpoint of the money saved in insurance premiums, but also from that of the reduced risk of loss and interruption of the college program by a disaster.

Outside of the variation in rate due to the degree of risk involved and the introduction of the coinsurance plan, there is little to be gained

by shrewdness in purchasing insurance.[7] Rates are standardized and cannot be improved by "shopping around." The only additional type of discretion necessary in purchasing insurance is to see that the companies in which the risk is carried are sound and have a reputation for fair dealing.

Maintenance Costs

As was stated previously, expenditure for maintenance in most college accounting systems is not separated from that for plant operation, and for that reason objective data cannot be presented in this study regarding variation in costs of maintenance. There is good reason to suppose, however, that expenditure for maintenance in various colleges presents equally as large a range as that for other functions, and that some institutions undoubtedly are spending more for this function than should be necessary under economical administration.

The principal reasons for excessive maintenance costs are: (1) the use of buildings which have outlived their usefulness and should be discarded; (2) shoddy construction in new buildings; and (3) lack of cooperation on the part of students.

It is difficult to judge the exact point at which it becomes economical to discard an old, depreciated building and replace it with a new one. Some types of buildings seem to warrant economical replacement sooner than others. The time for replacement of an old, worn-out heating plant can be determined fairly accurately by an engineering survey. Dormitories seem to be favored above academic buildings in replacement programs. While the classroom buildings of many colleges have been in use for half or three-quarters of a century or even longer without modernization, a dormitory building of this age is a rarity. It is much easier to calculate the loss of efficiency due to an old, outworn heating plant, or the loss of income due to a dormitory lacking modern facilities, than it is to calculate the loss of educational efficiency due to an antiquated academic building. The time certainly should come, however, in the life of almost any classroom building when it is economy to abandon it and erect a new building. So far as actual maintenance costs are concerned, the point of diminishing returns is reached when expenditure for rehabilitation of the old building purchases less in the way of provision for satisfactory academic space than the same outlay for new construction would provide.

Excessive maintenance cost in a new building is a matter for which the college administration should be severely criticized. It indicates that the construction was not adequately supervised, or that the college, in its eagerness to obtain a large amount of space for the funds available, allowed itself to sanction a shoddy piece of construction. In one college recently surveyed a new building of excellent exterior appearance was found to be in a bad state of repair. Plaster was falling off the inside walls and an expensive program of maintenance was immediately nec-

[7] An investigation made by H. C. Gregg in connection with the survey of Methodist colleges indicates the possibility of some savings thru coöperative purchasing of insurance by a group of colleges.

essary. This was a cost which careful construction should have avoided, and therefore should be considered as a grossly wasteful mistake on the part of the college administration.

Colleges show marked differences in the degree to which students respect the property of the institution. In some colleges such conditions are found as: pencil-marked walls, broken window and door glass, and badly marred equipment and furniture. In other colleges conditions of this kind seem never to have obtained. The difference is a matter of the development of student morale and consciousness of the property rights of the institution. Indications of a failure to develop in students the attitude of respect for the property of the college point to a serious weakness on the part of the administration. Such a condition, it must be admitted, is usually reflected in poor maintenance conditions rather than in excessive costs for this function.

A word should be said concerning the indirect costs of delayed maintenance. It must be remembered that repairs and replacements are usually relatively flexible items in the college budget and at the same time among the most difficult to predict in making the budget estimates, if it is the policy to allow the need for maintenance to become imperative before it is met. For example, painting and decorating are frequently postponed in the hope that the financial circumstances of the college will be more favorable at some time in the future; the replacement of a worn-out floor can be delayed several years, so long as people are not actually falling thru the worn boards. The college that follows the policy of delaying maintenance as long as possible usually finds itself forced to meet unexpectedly large outlays at most inconvenient times. A boiler is liable to go down at the very time the finances are the lowest. Not only are these outlays apt to be forced upon the college at inconvenient times, but the final cost is nearly always greater than would have been the case if the maintenance job had been undertaken earlier. For example, in one college recently surveyed the replacement of an old roof a few years earlier would have saved the cost of many temporary repair jobs and the cost of replacing loosened plaster as well.

The financial accounts of the college do not represent accurately the true cost of maintenance if the college is following the plan of postponing maintenance as long as possible. Over a long period of years it would be possible to figure rather accurately the costs for maintenance; but in a short period it is impossible to tell from the financial accounts what phase of the maintenance cycle the college is in. It may be that in the year studied the institution is suddenly having to make up for delayed maintenance by large outlays that should have been spread thru several years; or it may be that the institution is in the stage of postponing needed maintenance and during the year studied has actually expended a very small sum for this function.

From the standpoint of good administration, the only satisfactory program is an annual budget for repairs and upkeep sufficient to take care of the necessary recurring maintenance jobs, such as decorating, and to anticipate, rather than postpone, all the possible future replacements that might be made more economically at the present time. What-

ever the budgetary policy with regard to provision for maintenance, an excessive expenditure for this function may always be viewed with some suspicion. The implication is either that the plant is costing more than it should for maintenance, or that the unwise policy of delaying maintenance has been followed in the past.

Capital Outlay Costs of Buildings

The erection of a new building is a sufficiently rare occurrence in most colleges that it need not be given extended consideration in this study. From the standpoint of the present treatment, the item is relatively unimportant because this investigation is concerned with the inefficiencies in the current operating program rather than in the capital outlay budget.

One of the large universities in the Middle West, now engaged in a heavy building program, is spending approximately 82 cents per cubic foot for its new construction. Another university, less than 500 miles distant, is getting new buildings for less than 30 cents per cubic foot. While to some extent differences in labor and material costs affect this spread in prices, the difference is principally due to the quality of materials, the solidity of the construction, and the type of ornamentation. Each of these two institutions is probably getting what it pays for. The question immediately arises as to what a new building for a college ought to cost.

An institution of higher learning has the obligation to maintain a certain amount of dignity, and its buildings must in some degree be ornamental as well as useful. An aesthetically satisfactory environment no doubt contributes as vitally to the real education of the student as the classroom and laboratory exercises. In discussing the question of building construction, the president of one college recently surveyed was asked why a large expenditure had been incurred in the erection of one of the new buildings for a massive tower, decorative indeed but utterly useless for any present academic purpose. His reply was that the authorities of the institution wanted the building to be easily identified as a "college," and not mistaken for a public high school. Altho the institution was really in dire financial straits, and could well have used for other purposes the funds spent on the tower, the survey staff could not avoid admitting that there was real justification in the president's position.

Altho a college has an obligation to erect buildings with a certain degree of dignity, solidity, and aesthetic acceptability, the expenditures for new construction ought certainly to be in keeping with the general standards of expenditure within the institution. There is a painful incongruity between a poorly paid instructional staff and an elaborate academic building; similarly a well paid and highly trained faculty seems out of place in a shabbily constructed building.

It should be pointed out that, in the erection of an expensive type of building, the college saddles upon itself an excessive economic cost due to depreciation and interest on investment. The calculation of this cost has already been explained in the discussion of utilization of the plant.

On the other hand, the more cheaply constructed building usually has a higher rate of depreciation, altho the base is smaller, and maintenance costs are commonly higher in the cheaper building than in the more expensive type of construction. Theoretically it should be possible to figure a point of diminishing returns in construction costs at which depreciation at the higher rate on the smaller base, plus higher maintenance costs, exactly balances depreciation at the lower rate on the larger base, plus lower maintenance costs. This may be expressed by the following algebraic formula:

$$(Rc)\ (Cc) + Mc = (Re)\ (Ce) + Me \pm D,$$

Rc being the rate of depreciation of the cheaper building, Cc being the cost of the cheaper building, Mc being the annual maintenance on the cheaper building, Re being the rate of depreciation of the expensive building, Ce being the cost of the expensive building, Me being the annual maintenance cost of the expensive building, and D being the differential in favor of one or the other type of construction.

If it is desired to include also the interest cost, this can be added as a factor to each side of the equation for the respective types of building. The formula then becomes (I being the interest rate):

$$(Rc)\ (Cc) + I(Cc) + Mc = (Re)\ (Ce) + I(Ce) + Me \pm D.$$

Exact studies regarding depreciation rates are needed before these formulae become of any practical importance.

Summary

Considerable variation is shown in the expenditures per student for plant operation and maintenance in the colleges studied. There is no tendency for either the expenditure per student for this function or the percentage of total expenditure for this item to be associated with the size of the institution. This function differs markedly from the functions of instruction and of administration in this respect. The types of inefficiency pointed out in plant operation and maintenance are as follows: (1) poor utilization of space; (2) excessive heating costs; (3) excessive cleaning costs; (4) uneconomical insurance plans; (5) excessive expenditure for maintenance; and (6) capital outlay costs for over-expensive buildings.

CHAPTER VI

INEFFICIENCIES IN THE OPERATION OF SUPPLEMENTARY BUSINESS ACTIVITIES

MOST colleges and universities find it necessary to engage in certain activities of a quasi-commercial nature in order to supplement the service of the educational program. Such enterprises as dormitories, dining-halls, and bookstores are classified as supplementary business activities. Operating a dormitory for students is much like running a hotel; the administration of a dining-hall or cafeteria for students involves problems similar to those encountered in the management of a commercial restaurant; a bookstore is, as the name implies, primarily a store. Enterprises of this nature differ from ordinary commercial businesses of the same kind in that the college engages in them primarily out of a desire to serve the needs of students and to assist in making the academic program more effective. The profit motive is entirely secondary, the effort usually being merely to meet running expenses. Whatever surplus may be produced is expected to be used for the replacement of depreciation, or to be absorbed in the general educational program of the institution.

The pushing of the profit motive into the background is possibly responsible for the fact that in many colleges a careful analysis shows these enterprises not only to be failing to make a profit but actually to be drawing subsidy from the educational budget of the institution. There is perhaps no fundamental reason why it is not equally as legitimate to furnish board and room to students at less than cost as it is to furnish them education at less than cost. Custom decrees otherwise, however. The donors to endowment funds and the givers to denominational educational funds (the two principal sources of support for these colleges, other than income from students) are presumed to have given their money for direct educational service; income from these sources is therefore not usually considered available for the subsidization of supplementary business enterprises. Most colleges, in theory at least, follow the policy of requiring these various business activities to pay their own way.[1]

In an institution that professes to follow the policy of expecting its supplementary business activities to be self-supporting, the failure to administer these enterprises so that such an outcome results may be considered a source of inefficiency and an indication of an ineffective administration. It is desirable, therefore, to examine with some care the conditions which may cause these enterprises to become a burden upon the educational budget of the institution.

[1] Cf. Donald J. Cowling. *Op. cit.*, pp. 81-2.
Also Trevor Arnett. *Op. cit.*, p. 22.

Basis of Figuring Surplus or Deficit

Before passing to the detailed discussion of types of inefficiency in the administration of supplementary business enterprises, some attention should be given to the basis upon which the surplus or deficit from these activities should be figured. Colleges vary markedly in the degree to which these enterprises receive analysis in their financial accounts. It is not uncommon to find that no separation whatsoever has been made between educational expenditure and expenditure for supplementary business activities. In such accounting systems, receipts from students are entered in a single account, without any attempt to separate the income for the educational program from that for the dormitory and dining-hall. In some institutions surveyed by the writer a single fee covers board, room, and tuition, and the administrative officers could not say definitely how much of the fee was paid for each.

In colleges which do attempt to separate the expenditures for supplementary business activities from those for the educational program, the usual procedure is to credit to the activities the fees and other income received for those purposes, and to charge them with only the direct cash expenditures that are specifically allocated to the enterprises. Under such a system the share of the time of the college business office properly chargeable to these enterprises will be ignored, the fair share of the general college overhead administration will not be considered, and very frequently such items as heat, light, and water, if furnished from a central source, will not be charged against the activities. The "net cash surplus" in such cases is an item of doubtful interpretation.

There is valid argument for including in the cost analysis of these enterprises not only the direct cash expenditures plus the allocation of all the indirect charges, but also a rental charge to cover interest on invested funds and depreciation on building and equipment. Certainly no modern commercial enterprise would consider its cost analysis complete if such items were omitted.

College administrators differ in their opinions as to whether the institution should include a rental charge in setting up the rates for room and board. On the one hand, it may be argued that the funds used in the erection of the dormitory and dining-hall were given for that express purpose, and that therefore no interest charge can properly be set up; similarly, when depreciation reaches the point at which the building can no longer be used, other donors may be expected to step forward with new funds to replace the worn-out structure.

The counter-argument is that the original funds were given as a permanent memorial and therefore the college owes an obligation to accumulate a reserve for depreciation with which the building, when outworn, may be replaced. Even tho the funds were given for a designated purpose, there is no reason why they should not be made doubly productive by furnishing an interest income. One college recently surveyed has received a large gift for the erection of a new dormitory, with the stipulation that the income from the dormitory shall be used for a certain designated educational purpose. It is obviously in the mind

of the donor that this gift is to be a productive one, and the institution is undoubtedly expected to set up an interest charge in adjusting its dormitory rates in this instance.

Whatever may be the decision as to the advisability of making dormitories pay an interest and depreciation charge, the college owes itself the obligation of full information as to the total cost of such enterprises. This principle demands the inclusion of the rental item at least in the cost analysis, if not in the rate-making charge.

The accounting systems of most colleges fail to make a separation of the accounts for the various types of enterprises. Thus it is common to find all the dormitories and dining-halls carried under a single account, or to find the accounts classified according to building units, some of which contain both a dormitory and a dining-hall. In such an accounting system it is impossible to analyze the enterprises separately to determine the actual outcome of each. For example, the responsible administrator needs to know whether the dining-hall is producing a surplus which the dormitory is absorbing, and whether one dormitory produces better returns than another. Such facts are needed if any careful study is to be given to the management of the various units maintained and if the rates are to be adjusted to cover costs.

Table XI presents data concerning the outcome of the operation of supplementary business activities in each of thirty-five colleges. The various types of enterprises are not separated in this table, but the outcome for all combined is considered. In order to show the outcome at the various levels of profit figuring, this table presents the net cash surplus (or deficit) as shown by the college books, the net after the allocation of all indirect charges, and the net after the inclusion of a rental charge at the rate of 10 per cent[2] on the value of the plant and equipment used in these enterprises.

It will be noted from this table that in most of these colleges, according to their own accounting, the supplementary business enterprises show a surplus. When the indirect expenditures properly chargeable to these enterprises are included, all the colleges, with a few exceptions, show either a smaller net profit or a larger deficit. The exceptions are the colleges that have their accounts so set up that all indirect charges are properly allocated. When a rental charge is also added, only one of the thirty-four institutions shows a net profit. In other words, in only one of these colleges is the income from the supplementary business enterprises adequate to cover what in ordinary commercial practice would be considered the true costs.

In the colleges in which the income from supplementary business activities is not sufficient to pay the cash outlay entailed in their operation, the educational budget must eventually make up the deficit. It is therefore important to examine the administration of these activities for possible inefficiencies. In the remainder of this chapter some of the points at which inefficiencies occur in the management of supplementary business enterprises will be discussed.

[2] The colleges are being advised by representatives of some of the educational foundations that this is the correct rate for the combined interest and depreciation charge. The rate represents interest at 6 per cent and depreciation at 4 per cent on plant and equipment.

TABLE XI. FINANCIAL RESULTS* OF OPERATING SUPPLEMENTARY BUSINESS ENTERPRISES IN THIRTY-FIVE COLLEGES

College number	Net results as shown by college accounts	Net results including all indirect expenditures	Net results including a rental charge and all indirect expenditures	Net surplus or deficit per student enrolled, including rental charge
1	$+31,359	$+31,359	$+234	$+0.31
2	+838	+838	—817	—.92
3	+216	+16	—566	—.95
4	+6,639	+5,739	—661	—1.02
5	+182	+82	—1,516	—1.69
6	—82	—182	—1,304	—2.17
7	+16,722	+16,722	—4,985	—2.79
8	+9,062	+7,945	—1,619	—3.26
9	—941	—1,591	—2,869	—7.23
10	—311	—311	—2,800	—7.35
11	+5,051	+4,451	—1,749	—9.16
12	+28,780	+28,780	—7,451	—9.54
13	+2,444	+2,144	—6,556	—12.03
14	—1,169	—1,919	—2,919	—13.90
15	—1,344	—2,568	—3,338	—14.71
16	+4,778	+4,066	—9,634	—18.82
17	+265	+7	—6,431	—21.02
18	+4,574	+4,314	—3,167	—24.74
19	+2,581	+1,931	—8,453	—25.16
20	+5,889	+4,875	—19,547	—26.81
21	+3,757	+3,057	—9,438	—28.95
22	+16,572	+8,929	—16,171	—29.67
23	+10,404	+9,270	—21,805	—31.42
24	+17,342	+17,342	—11,427	—32.37
25	+7,263	+7,263	—8,923	—39.31
26	+1,551	+1,051	—9,949	—39.44
27	—490	—5,070	—19,213	—40.03
28	+15,429	+13,929	—24,871	—41.80
29	+17,102	+13,029	—71,495	—51.62
30	—1,115	—2,433	—25,214	—52.31
31	+2,885	+1,470	—21,801	—55.05
32	+1,952	+1,952	—32,505	—57.72
33	—1,124	—1,124	—27,162	—58.92
34	—1,052	—2,052	—12,952	—85.78
35	—210	—210	—3,190	—102.90
Median	$+2,581	$+1,952	$—7,451	$—24.74

*A surplus is indicated by a plus sign (+), a deficit by a minus sign (—).

Failure to Charge Adequate Rates

Perhaps the condition that most commonly causes a net loss in the operation of supplementary business enterprises is the failure to charge a rate that covers the cost of the service rendered. In large part this condition is induced by unsatisfactory cost accounting practices. In several colleges recently surveyed the administrators had never given thought to the calculation of the indirect charges that should properly be allocated to the supplementary business activities. Even such obvious items as the cost of heat supplied from a central plant, or the cost of electricity used (one meter controlling both the academic buildings and the dormitories) had never been considered as charges against the various business enterprises of the college. The educational budget had been carrying the burden of these charges, while the administration was flattering itself that the supplementary activities had been avoiding a deficit because the cash income was at least equal to the cash expenditure directly chargeable to these activities. Without adequate cost information, the fixing of satisfactory rates is impossible.[3]

Occasionally it appears that a college president feels under obligation to maintain a low rate in the dormitory and dining-hall in order that students having limited financial resources may not be prevented from receiving the benefits of an education. The writer has real sympathy with this position. It should be pointed out, however, that the published rates apply to all students, not merely to those of limited means. In fixing the rates at less than the cost of service, many students who could well afford to pay the full cost are also subsidized. A straightforward solution of this problem would justify the fixing of rates to cover the full cost, with provision of special assistance from some other source for the aid of needy and worthy students. Aid for students is an object that has a strong appeal to donors, and it is usually easier to raise funds for this purpose than for the general support of the educational program. It is therefore a mistake to take funds from the general budget in order to subsidize the board and room of even needy students; the subsidization of those who can well afford to pay the full costs for these services seems entirely unjustifiable.

Failure to Utilize Facilities to Capacity

It is usually difficult to realize an operating surplus from a dormitory that is not well filled. If rates are fixed upon any carefully worked out basis, complete occupancy is usually presumed. It generally proves difficult to reduce operating costs in proportion to the partial occupancy. If the rental charge is figured in, there is no diminution of this item because of partial occupancy.

Three conditions in the college that contribute to incomplete occupancy of dormitories may be mentioned. The first is an unwarranted expansion of dormitory facilities. In one college surveyed in 1929 an excellent new dormitory providing housing facilities for 200 young women

[3] Cf. Trevor Arnett. *Op. cit.*, p. 90.

had been completed in 1927. In no one of the three years of its operation had more than 100 students been housed in this building. To make the matter still more unfortunate, the dormitory had been erected from borrowed funds, with the expectation that the profits from its operation would pay the interest and retire the debt. In this particular instance the administration of the college had allowed itself to be persuaded into the erection of this building without an adequate analysis of the needs of the institution. It should be clear that no new dormitory construction should be undertaken by a college without a thorogoing study of the probable number of students who will need such facilities. In this analysis the college should be guided by cold facts and conservative estimates, rather than by fond and loyal hopes.

The second condition that contributes to incomplete occupancy of dormitories is the use of poorly maintained and unsuitably equipped buildings. Inspection of the dormitories in colleges recently surveyed reveals the fact that a few buildings are still in use which would be considered almost uninhabitable by those accustomed to a "minimum comfort" standard of living. It is small wonder that students tend to choose other living quarters under such conditions. A program of renovation, if the building warrants the expenditure, is the solution. If the building is not worth the expenditure for renovation, common sense would indicate that it ought to be abandoned as a dormitory instead of operated at a loss on a basis of partial occupancy.

The third condition which, particularly in recent years, has affected the occupancy of dormitories is a history of declining enrolment. During the rapid increase of enrolments after the World War, many colleges made arrangements to increase their dormitory facilities. With the reduction in enrolment that has occurred in many of these colleges during the past few years, great difficulty has been experienced in keeping the dormitories filled to capacity. Some institutions have met this situation by making residence in the dormitory a condition of admission to the college, at least for certain classes of students. Other colleges are finding that a judicious use of funds in recruiting students is an economical method of keeping up enrolments and of maintaining complete occupancy in the dormitories.

Inefficiency of Small Units

The experience of most colleges in the administration of dormitories indicates that a unit housing fewer than one hundred students can seldom be operated at a reasonable cost. In some colleges recently surveyed expansion in dormitory facilities has been provided by the purchase of residences near the campus, which have been converted into dormitories. Careful analysis shows that such units rarely have an income equal to their expenses.

The difficulty seems to arise in part from the fact that in the small unit the overhead of supervision and administration is proportionately heavier than in the large units. It is usually necessary to employ some supervisory officer to live in each dormitory unit. A matron can supervise one hundred students as well as ten; for this reason the overhead becomes proportionately higher in the small unit.

A second reason why the smaller dormitory unit is less economical than the larger is that the ratio of accessory space to sleeping-room space is larger in the former. Social rooms must be provided, and these usually cannot be reduced in space in proportion to the number of students served, when the number is small. Stairways and hallways also probably require a greater proportion of space in the small unit than in the larger.

Inefficiency in Management

There is a large opportunity for the display of managerial effectiveness in the administration of supplementary business activities. The figures of Table XI do not reflect this item directly for the reason that, if the college has adjusted its rates to cover the cost of inefficient management, no burden is thrown upon the current budget. In other words, even tho an institution has inefficient management, the rates may be placed at a point sufficiently high to cover the extra cost. As a matter of fact, however, rates are to some extent set by competition with other colleges, and the institution with inefficient management of its supplementary business enterprises is very likely to find these activities producing a net deficit instead of meeting all their own expenses.

An interesting study might be made of the personnel engaged by colleges for such activities as managing the dormitories, dining-halls, and bookstore. In many institutions it is evident that questions of managerial ability have had little or no part in the selection. The position of matron of a dormitory is frequently thought of as a sinecure for some aged friend of the college who, because of her fine character, will have a wonderful influence on the students under her charge. Frequently the place is filled by the impecunious widow of a former professor; sometimes it is the widow of a former minister for whom, owing to the devious ways of denominational politics, the college must provide. All too frequently little is known or demanded by the college in the way of training for institutional management. The writer would be the last to deny that praiseworthy character is one of the essential qualifications for such a position; it should be insisted, however, that some knowledge of the business of institutional management accompany the qualification with regard to character.

Since ineffective management of these enterprises is not necessarily connected with a burden upon the educational budget, only brief mention will be made of some of the types of inefficiency observed in dormitory and dining-hall management. One of the most important sources of waste is in the purchasing. This applies particularly to the dining-hall. The topic of purchasing as it is related to the regular business activities of the college has already been discussed, and the points raised in that connection apply equally to the management of supplementary business enterprises.

A second source of waste frequently observed is poor supervision of employed help. It is common practice to employ students for work about the dining-hall and dormitory. Student labor is notoriously inefficient, and careful supervision is necessary if full value is to be obtained for the funds expended for such service. In one college recently surveyed it was

observed that thirty students were employed as dishwashers and waiters in a dining-hall that accommodated only 120 students. Each of the thirty student helpers received his board for the work that was done. The kitchen was fully provided with mechanical equipment, and there was no local condition that would in any way justify such a large amount of help in a dining-room of this size. Upon inquiry it was discovered that the jobs of waiting on tables and washing dishes were customarily assigned to members of the football squad. These men were kept rather busy in their athletic endeavors, however, and were frequently called upon to be absent from the campus on account of games with other colleges. For that reason it was provided that each of these athletes should have a substitute who would care for his kitchen or dining-hall duties whenever necessary. The original understanding had been that the substitutes would receive their board free only when they were actually at work; similarly the athlete-employees would not be given their board except when they were on duty in the dining-hall or kitchen. In some manner this original understanding had been forgotten, and at the time of the survey (long after the football season had closed) the athletes and their "substitutes" were both helping in the dining-room—and receiving free board. This incident illustrates some of the difficulties of providing adequate supervision for student help.

The third type of waste frequently observed in the management of dormitories is the failure to administer breakage and damage charges so as to avoid a loss to the college from this source. In a college for men which the writer once surveyed, the administration considered the annual outcome satisfactory if the surplus of the dormitory income over directly chargeable expenditure was large enough to replace the broken door panels, stair railings, window lights, and furniture, and to put the building back into a habitable condition before the opening of the following year. In other colleges a carefully administered system of breakage charges has been worked out, which results in the collection from the responsible students of a fund with which to replace all unwarranted wear and tear.

Athletic Subsidies

The discussion of the administration of supplementary business activities has related for the most part to such enterprises as dormitories, dining-halls, and bookstores. Interscholastic athletics, as carried on in most colleges, really deserves to be included among the supplementary business enterprises; at least it belongs in this category rather than in the classification of educational activities. However much this condition may be deplored, from a financial point of view competitive athletics is a real business enterprise in most colleges today. Not infrequently this activity is generously subsidized from the educational funds of the college, and therefore becomes a burden on the educational program.

The writer has no suggestions to offer regarding methods of managing interscholastic athletics. The point of this discussion is that, so long as these activities are not of direct educational value to the student body generally, they should be so managed that the funds provided for educational purposes need not be drawn upon for their support.[4]

[4] Cf. Donald J. Cowling. *Op. cit.*, p. 81.

Summary

Most colleges find it necessary to maintain certain supplementary business enterprises, such as dormitories, dining-halls, and bookstores. If these enterprises are not so managed as to be self-supporting, they become a burden upon the educational budget. The basis for analyzing the results of these activities is faulty in many institutions. Four causes are suggested for failure of supplementary business enterprises, especially dormitories and dining-halls, to pay their own way: (1) failure to charge adequate rates; (2) failure to utilize facilities to capacity; (3) inefficiencies due to the operation of small units; and (4) ineffective management. If interscholastic athletics is operated as a supplementary business enterprise and is not conducted in such a way as to be of direct educational value to the student body generally, the general funds of the college should not be drawn upon for its support.

CHAPTER VII

INEFFICIENCIES IN STUDENT RECRUITING AND PUBLICITY

FROM one point of view it appears absurd that colleges find it necessary to spend funds in recruiting students. Most institutions are offering education at a price to the student considerably below its cost to the college; the continual spending of funds to induce young people to buy this valuable commodity at less than its cost of production carries some serious economic implications. On the other hand, colleges are accustomed to carry on rather extensive solicitation for students with athletic ability;[1] there seems to be no logical reason why this process should not be extended to include the recruiting of students of superior scholastic ability. From a still different point of view it may be considered that it is a part of the educational service of the college to convince young people of their need for education.

The question has important practical as well as theoretical implications. The budget of the college must be prepared before the opening of the academic year. Arrangements must be made for the service of faculty members well in advance of the beginning of the year. The whole program of the institution is geared up to accommodate a certain expected number of students. If fewer than the anticipated number present themselves on registration day, it is usually difficult to reduce expenditures in proportion to the loss of income. On the other hand, if the enrolment proves to be slightly larger than was anticipated, the additional students can frequently be taken care of without a proportionate increase in expenses. It becomes important, therefore, to see that the anticipated enrolment is actually realized, or even exceeded. The funds expended for student promotion and publicity thus may be considered a species of insurance against deficiencies in the budgeted income.

Expenditure for Student Recruiting and Publicity

Colleges differ markedly in the amount of money which they put into the recruiting program. Table XII shows for thirty-four colleges the amount spent per student for this service during one fiscal year. In this table all types of publicity directed toward the goal of inducing prospective students to enrol in the college are considered as performing a recruiting function. The divisor used is the total number of students enrolled in the college, not the number added to the enrolment by the recruiting system.

[1] Howard J. Savage. *American College Athletics.* Bulletin No. 23, The Carnegie Foundation for the Advancement of Teaching, New York, 1929, pp. 227-40.

TABLE XII. EXPENDITURE PER STUDENT FOR PUBLICITY AND STUDENT RECRUITING IN THIRTY-FOUR COLLEGES

College number	Expenditure per student for publicity and student recruiting
1	$49.26
2	42.33
3	18.53
4	18.51
5	18.30
6	17.81
7	17.48
8	14.92
9	14.59
10	12.66
11	11.72
12	11.40
13	11.30
14	11.26
15	10.91
16	7.30
17	5.96
18	5.85
19	5.66
20	5.63
21	5.59
22	4.95
23	4.95
24	4.87
25	4.77
26	4.63
27	4.60
28	4.45
29	4.13
30	3.07
31	3.07
32	3.03
33	2.06
34	1.49
Median	$5.91

It is difficult to determine the point at which expenditure for student recruiting becomes a waste of funds. It will be noted from Table XII that one of the thirty-four colleges spends more than eight times as much on this function, per student enrolled, as the median institution does. Another college spends seven times as much, and five other colleges spend, each, approximately three times as much as the median institution.

The case of college Number 1, which spent on this function $49.26 per student enrolled in 1928-1929, is interesting. For several years prior

to 1928-1929 this college had experienced a discouraging history of declining enrolments. The trend had become so pronounced that the administration felt that the confidence of the constituency was seriously shaken. Heroic efforts were deemed to be necessary, and an expensive campaign of student recruiting was deliberately planned. The plan was successful, for not only was the decline in enrolment stopped, but a satisfactory gain over the preceding year was recorded.

The president of this college is convinced in his own mind that the expenditure was justified from the standpoint of bolstering up the morale within and without the institution. From a financial point of view, however, the wisdom of the expenditure may well be questioned. Assuming that the extra students who were induced to attend the college by the recruiting campaign imposed no additional expense, the fees which they paid to the institution could not possibly have covered the total cost of the recruiting program. At the time of the survey this college was planning a similar campaign for the following year. The survey staff strongly urged against such a large expenditure for student recruiting, advising the college that it would be wise to trim the program to suit the needs of the smaller student body, if the desired enrolment could not be attained without such intensive recruiting methods.

At one of the other colleges having a relatively high cost for student recruiting, the survey staff criticized adversely the recruiting methods employed. This college recognizes no territorial limitations to its recruiting program. Its agents travel far and wide in their efforts to solicit students, and do not respect even the natural territory of other colleges under the auspices of the same denomination. Some of these other institutions describe the recruiting program of the college in question as a "cut-throat" affair. It is possibly because of the methods employed that this program is one of the relatively expensive ones shown in Table XII.

One of the difficulties in analyzing the results of student recruiting campaigns is that the college administration finds it impossible to say just how many students were added to the enrolment by the program of solicitation. Even a direct inquiry among students is not a satisfactory method of answering this question, since the individual student is frequently influenced by a variety of factors in choosing his alma mater. A study by Ellis M. Reeves,[2] based on data a part of which were collected in connection with the surveys of Methodist colleges, indicates that solicitation by representatives of the college is an important factor affecting the student's choice. It is impossible to say, however, just how many students in any college would have gone to some other institution or would have gone to no college whatsoever if the program of solicitation had been entirely omitted.

Another difficulty faced in studying the efficiency of the student recruiting program is the practical impossibility of properly allocating

[2] Ellis Marion Reeves. *A Study of Factors Influencing Choice of an Institution of Higher Learning.* Unpublished master's thesis, College of Education, University of Kentucky, Lexington, 1930, pp. 73-4. (A digest of this thesis has been published in *The Journal of Higher Education*, Vol. III, No. 2, 1932, pp. 67-74.)

in the accounting system all the expenditures that are actually chargeable to this service. In the figures of Table XII, only such direct expenditures were included as the payment of soliciting personnel and their expenses, the cost of publications, postage, entertainment, etc. It is probable that under strict accounting methods it would be proper to charge many other items to the student recruiting program. Perhaps a share of the salary of the president should be included—altho the exact amount would be only a guess. Similarly the salaries of other administrative officers and faculty members who do some incidental recruiting should be prorated to this service. Several presidents have expressed the opinion in the course of the survey that the customary rebate in fees allowed to sons and daughters of ministers is an indirect expenditure for recruiting. (After obtaining the good will of the pastor by allowing his children lower tuition rates, it is hoped that he will use his influence to send other prospective students to the college.) Many other examples might be cited of indirect expenditure for student recruiting which even an ideal accounting system could scarcely be expected properly to allocate.

Student Recruiting as a Non-Educational Function

It is the opinion of the writer that expenditure for student recruiting should not be considered as serving an educational function in the college.

The product of student recruiting may be divided into two groups: (1) those who would have attended some college in any event, and have merely been directed toward *this* college rather than some other; and (2) those who would not have attended any college and have been convinced of the desirability of obtaining further education. Certainly no educational service is rendered either students or society in general by attracting the first mentioned type of students. The tugging and hauling process of persuading some bewildered high school graduate to attend *this* college rather than some other college is not only academically undignified, but is a positive social and economic waste.

With regard to the second group, it is first necessary to show that considerable numbers of young people who had no intention of attending college are being drawn in as students. Such a result would probably be difficult to prove in most institutions. Even if the presence of such a group is granted, it is necessary to show that wisdom is being employed in selecting those who are urged to attend. So far as the writer is aware, no college has made a careful study of the academic success of those students who attend primarily because of a high-pressure "sales campaign." Altho conspicuous examples are frequently pointed out of students brought into the college by the recruiting program who have later rendered notable service to society, it seems probable that these constitute the exception rather than the rule in most colleges. Possibly it is worth while to conduct the recruiting program merely for the sake of the occasional outstanding person who is thus brought into contact with higher education and prepared for a greater service to his fellowmen.

Another factor to be considered is the question of whether greater social and economic utility might not be produced by these young people, induced to enter college by high pressure salesmanship, if they did not attend college. The degree of overcrowding in some of the "white collar" occupations for which the college prepares indicates that possibly the student recruiting programs are disturbing the operation of certain economic laws which, if allowed to act normally, would bring about a better balance between the demand and the supply of workers in various vocational fields.

In view of these considerations, the writer is inclined not to consider the expenditure for student recruiting as a part of the educational service of the college.[3] It therefore follows that the recruiting program should be conducted in such a way as not to become a burden on the educational budget. In other words, it should be clearly demonstrated that the program of student solicitation is paying its own way, either by the increased income from fees, or by subsidization from special gifts.

Summary

Most colleges find it necessary to spend some funds in recruiting students. The amount expended for this purpose in the institutions that have been studied varies markedly. There is evidence that inefficient programs of student solicitation are followed in some colleges. Since it appears that there are valid arguments for not considering this function as an educational service, the student recruiting program should be expected to pay its own way.

[3] Cf. Donald J. Cowling. *Op. cit.*, pp. 82-3.

CHAPTER VIII

INEFFICIENCIES IN THE PROVISION OF FINANCIAL ASSISTANCE TO STUDENTS

AN oft-repeated educational truism points out the obligation of a democratic society to provide every young person an equal opportunity for the fullest development of the powers with which nature has endowed him. One of the devices employed by society for providing this equal opportunity is the public school system. In the early state constitutions brave sentiments were expressed regarding "a general system of education, ascending in a regular gradation from township schools to a State University, wherein tuition shall be gratis, and equally open to all" (Indiana Constitution of 1816, Article IX, Section 2). During the first quarter of the twentieth century this early dream was practically realized in most states, so far as education of elementary and secondary grade is concerned. At the level of higher learning, however, the states have found themselves unequal to the task of providing education on an entirely free basis.

While the tax-supported institutions of higher education have been unable to maintain themselves without charging tuition, the situation has been even more difficult in the endowed and denominationally supported colleges, which share the task of providing the equal educational opportunity at the higher level. These institutions have found it necessary to draw to the utmost upon every source of financial support in order to make the progressive improvements in their programs that are being demanded to meet modern standards. Church appropriations for educational purposes have failed under the strain, and have actually begun to decrease in some denominations. Endowment funds could not possibly keep pace with the rising demand, despite numerous high-powered campaigns and drives. The result has been that one of the more elastic elements in the income budget, student fees, has been forced to bear much of the burden of the necessary increases in revenue.

History of Student Fees

Table XIII presents data showing the increases that have occurred over a period of twenty-one years in the fees charged students in twenty colleges recently surveyed. In this table, the actual fee has been converted, for the purposes of comparison, into the percentage of the fee charged in the year 1930-1931. Blanks have been used in the table for the years not represented in the history of a college or for which no data were available. The fee considered represents the general fee charged all students, but does not include special fees, such as those charged for laboratory courses, matriculation, diploma, etc.

TABLE XIII. PERCENTAGES WHICH THE FEES CHARGED STUDENTS IN PREVIOUS YEARS ARE OF THOSE CHARGED IN 1930-1931, FOR TWENTY COLLEGES

College number	Year							
	1909-1910	1912-1913	1915-1916	1918-1919	1921-1922	1924-1925	1927-1928	1930-1931
1	17	17	24	29	61	73	91	100
2	17	34	34	43	57	57	100	100
3	20	27	27	31	53	53	89	100
4	20	27	33	34	53	83	87	100
5	24	26	32	40	60	80	88	100
6	25	25	33	42	67	67	83	100
7	27	27	27	35	60	75	93	100
8	28	28	41	41	59	79	88	100
9	30	36	44	51	74	88	94	100
10	31	38	38	42	49	62	77	100
11	31	40	43	46	72	80	100	100
12	32	32	37	46	58	58	89	100
13	35	35	37	48	58	80	96	100
14	.....	26	31	42	62	76	100	100
15	.....	35	41	50	71	82	82	100
16	.....	.....	20	25	45	63	83	100
17	.....	.....	30	42	50	50	70	100
18	.....	.....	.....	.....	59	75	87	100
19	.....	.....	.....	.....	62	79	88	100
20	.....	.....	.....	.....	.....	75	100	100
Median*	27	28	33	42	59	75	89	100

*Medians are based on the institutions for which data are available.

It will be observed that in all of the colleges for which a history of fees was obtainable there has recently been a marked tendency to increase tuition charges. A portion of this increase is accounted for by changes in the value of the dollar. Calculation has been made of the changes in fees after reducing the amount of the charge to dollars of equal purchasing power. The multiplier employed in this computation is the index of wholesale prices calculated by the United States Bureau of Labor Statistics.[1] The index used is that for the year in which the school year begins. Table XIV presents the data for changes in student fees, converted into dollars of equal purchasing power, and expressed as the percentage which the fee charged in previous years is of that charged in 1930-1931.

[1] *Wholesale Prices 1929.* Bulletin of the United States Bureau of Labor Statistics, No. 521, Washington, D.C., August, 1930, p. 12. The index for 1930 is calculated by the same agency, but is taken from *Monthly Labor Review*, Vol. 33, No. 3, September, 1931, p. 247.

TABLE XIV. CHANGES IN STUDENT FEES OVER A TWENTY-ONE-YEAR PERIOD, IN TERMS OF DOLLARS OF EQUAL PURCHASING POWER, FOR TWENTY COLLEGES

College number	Percentage which fee charged in previous years is of that charged in 1929-1930, in dollars of equal purchasing power.							
	1909-1910	1912-1913	1915-1916	1918-1919	1921-1922	1924-1925	1927-1928	1930-1931
1	22	21	30	19	54	64	82	100
2	22	42	42	28	50	50	90	100
3	26	34	34	20	47	47	81	100
4	26	34	41	22	47	73	79	100
5	31	32	40	26	53	70	80	100
6	32	31	41	28	59	59	75	100
7	34	34	34	23	53	66	84	100
8	36	35	51	27	52	69	80	100
9	38	45	55	34	65	77	85	100
10	40	47	47	28	43	55	70	100
11	40	50	53	30	64	70	90	100
12	41	40	46	30	51	51	81	100
13	45	44	46	32	51	70	87	100
14	.....	32	38	28	55	67	90	100
15	.....	44	51	33	63	72	74	100
16	.....	.....	25	16	40	55	75	100
17	.....	.....	37	28	44	44	63	100
18	.....	.....	.....	.....	52	66	79	100
19	.....	.....	.....	.....	55	69	80	100
20	.....	.....	.....	.....	.....	66	90	100
Median*	34	35	41	28	52	66	81	100

*Medians are based on the institutions for which data are available.

Table XIV shows that there has been a marked increase in the fees charged students, even when the changes in the value of the dollar have been accounted for. It will be noted from this table, however, that only in the more recent years have increases of real significance occurred.

Increases in student fees such as are shown in Tables XIII and XIV bring directly into the foreground the question of some form of aid to worthy students. Altho this problem has been an ever-present one, the recent raises in fees have both added to the number of cases in which assistance is needed, and at the same time increased the amount of aid the average student must have. As a result of this condition, many colleges find themselves forced to expend considerable sums for the purpose of aiding students, and most colleges find that their present funds for this purpose are inadequate.

Student Aid as a Non-Educational Function

The question may well be raised as to whether the funds expended for financial assistance to students should be considered as "educational expenditure" in the strict sense of the term. This is not an easy question. The president of one of the colleges recently surveyed is thoroly convinced that the expenditure for student aid should be considered as serving a real educational function. His argument is that thru such expenditure educational facilities are opened up to young people who would not otherwise obtain an education. Anything that promotes a larger and better opportunity for college training is performing an educational service.

President Cowling[2] of Carleton College would classify all expenditures for student aid into two groups, the one made with regard to the financial need of the student, the other made without regard to financial need and only on the basis of scholastic promise, as a prize or honor. The former would not be considered an educational expenditure, the latter would be. The argument in favor of the inclusion of the honor scholarship or prize as an educational expenditure is that it performs the function of stimulating students to greater effort. Anything which has this power may be considered educational, since it is obvious that with a large number of students striving for prizes, the motivation of the work is certain to be increased.

The writer is inclined to take the view that student aid from any source that takes the form of relieving the student of the payment of a part or all of his tuition fee is a non-educational expenditure. The argument may be approached from the standpoint of the accounting that is involved. It is a fundamental principle of good accounting that all transactions must appear in the books, and that offsets which balance one another must not be ignored, but must appear on both sides of the accounts. Reeves and Russell[3] have shown that in the accounting for fees remitted to students there should be ledger entries crediting the source of income, "student fees," and debiting the purpose of the expenditure, "student aid." In the case of scholarships paid from endowed funds, the complete history of the transaction is in four stages: (1) a receipt from endowment, restricted for a particular purpose; (2) an expenditure for student aid; (3) a receipt from student fees; and (4) an expenditure for some educational purpose, such as faculty salaries, instructional supplies, etc. It thus appears that, if student aid is an educational expenditure, the funds used for this purpose have performed two educational services. This is absurd, for obviously only one educational service can be performed by a given sum of money.

To carry the matter further, it is apparent that the total educational expenditure will be inflated, and the amount per student will be an entirely false figure, if such disbursements are counted twice as an expenditure for educational purposes. There is no doubt but that when

[2] Ideas expressed in an interview with the writer, in April, 1930.
Cf. also Donald J. Cowling. *Op. cit.*, p. 80.

[3] Floyd W. Reeves and John Dale Russell. *College Organization and Administration.* Board of Education, Disciples of Christ, Indianapolis, 1929, p. 214.

the fund in question is used the second time to purchase faculty salaries, instructional supplies, etc., a real educational function is being performed. In one case the expenditure provides the educational facility, in the other case it is used to persuade the student to make the most of the facility provided. It thus appears that the first time the fund was expended, namely, when it provided student aid, no educational service was performed.

In the case of remitted fees the argument is somewhat different. The transaction in this case may be conceived of as: (1) an expenditure by the institution for student aid; and (2) a receipt from student fees. The revenues of the institution are in no way increased by the transaction, and the "income" is purely an accounting fiction. The service which is actually rendered students does not take place at the cashier's window, but in the classroom. Effectually the remission of fees for a student grants him the privilege of sitting in classes. But the fictitious expenditure for this privilege cannot be considered an educational expenditure; the real educational expenditure in this case involves the payment of the salaries of the faculty members in whose classes the student sits. Certainly the payment of a faculty member's salary and the granting of permission to a student to sit in his classes cannot both be considered educational expenditures.

To carry the argument of *reductio ad absurdum* still further, the case may be imagined of an institution dependent entirely upon student fees for its support. Suppose such an institution remits all the fees to all its students. If the provision of free tuition is in itself an educational function, the amount of service rendered by such a college would thus be limited only by the number of students who could be induced to go thru the formality of registration. But it is obvious that no education could be given in such an institution, for there would not be a single dollar available for the payment of faculty salaries or other expenses incidental to the instructional program.

In the light of these arguments it would seem that expenditure for student aid, where the aid takes the form of assistance in payment of fees, should not be considered as performing an educational function.[4] It will be noted that prizes and other forms of motivation, which clearly have a much more logical claim to be considered as educational in character, are not barred from this classification by this definition, provided they do not take the form of relief from the payment of fees. Those forms of motivation that do take the form of remission of fees, such as honor scholarships for the highest student in each college class, are usually few in number and relatively unimportant in amount. For the sake of consistency in accounting it would be better to consider that such expenditures are non-educational, rather than to continue to contend that they actually perform double educational service.

[4] Expenditure for scholarships is classified as a non-educational expense by the National Committee on Standard Reports for Institutions of Higher Education in its report *Suggested Forms for Financial Reports of Colleges and Universities*, July, 1931, p. 30.

Types of Student Aid

Financial assistance to students may be classified into six different types, according to the form and the source from which derived. These types are: (1) endowed scholarships; (2) scholarships from current funds (remitted fees); (3) scholarships from current gifts; (4) student loan funds; (5) failure to collect fees charged; and (6) student employment.

Aid from endowed scholarships takes the form of the payment of a specified sum from the earnings of a restricted portion of the endowment. In most cases the choice of the recipient of the scholarship is under the control of the college, altho in many institutions scholarships were sold in former times of financial stress, giving the donor the perpetual right to name a scholar who is entitled to free tuition. Such scholarships are usually embarrassing, and many colleges that originally made the mistake of adopting this plan for raising funds are now buying back all such scholarships as rapidly as possible.

In some cases the sum specified to be paid on the endowed scholarship account is merely named as the amount earned by the fund. In other cases a definite rate of income is fixed, such as 5 per cent, which must be paid whether the fund is invested to produce this rate or not. In case the earnings of the fund are less than the specified amount, the college is under obligation to supplement from current funds the inadequate produce of the invested assets. In other cases the stipulation, "full tuition," has been specified as the amount to be paid. This has proved embarrassing when tuition rates have been increased, making it necessary to supplement the income from current funds. Some colleges have employed the subterfuge of retaining the tuition fee at a nominal figure, but providing a second fee which must also be paid, under such name as the contingency fee, the general fee, or the maintenance fee. In such cases the college has been able to avoid a loss due to payment from current funds for supplementing the earnings of the endowed scholarships, altho the subterfuge is ethically questionable.

The second type of student aid, scholarships paid from current funds, usually takes the form of a remitted fee. Most colleges under denominational auspices follow the practice of remitting fees to certain specified types of students, such as the sons and daughters of ministers of the supporting denomination (sometimes of any denomination), students preparing for the ministry, sons and daughters of faculty members, etc. In some cases the entire fee is remitted to such students; in others only a fraction is remitted. In some institutions free tuition is granted to students having certain specialized abilities, such as athletes or debaters. This practice is distinctly frowned upon in the case of athletes,[5] altho so far as the writer has been able to discover no one seems to be worrying about professionalism in the debating team.

The third type of student aid is the payment of scholarships from current gifts that are specified for this purpose. Some colleges follow the practice of seeking annual gifts to be used for scholarship purposes.

[5] Howard J. Savage. *Op. cit.*, pp. 253-7.

Frequently it is possible to combine the solicitation of such gifts with the program of recruiting students; when a young man or woman is found who desires to attend college but lacks the necessary financial resources, it is sometimes feasible to interest people of means in the same community in providing funds for a scholarship. Presidents of colleges who are accustomed to solicit annual gifts for scholarship purposes testify that this is an object for which it is relatively easy to raise funds. In some cases public funds are appropriated for scholarship purposes. The state of New York provides a specified sum toward the tuition of high ranking graduates of the secondary schools of the state, which may be applied in any of the institutions of higher learning in the state.

The fourth type of student aid, loan funds, may be divided into two distinct classes, the first consisting of funds under the control of the college, the second consisting of funds to which the college may recommend students, but which are not under its immediate control. In a number of the institutions included in this study one of the important sources of student loan funds from outside the college is The Board of Education of the Methodist Episcopal Church. Other philanthropic agencies provide opportunities for loans, among which may be mentioned the Eastern Star, Knights Templar, Rotary (thru local clubs), etc. Several of the colleges studied have available the loan service of the Harmon Foundation. Properly speaking, the loan funds not under the control of the college should not be considered as a part of the institution's program of aid to students, altho such facilities do serve to supplement the service of loan funds belonging to the college itself.

The fifth form of aid to students, failure to collect fees, is usually not a deliberate part of the program. In a few colleges recently surveyed it has appeared that opportunities were found to subsidize athletes in this way without becoming involved in charges of granting athletic scholarships; but in general the failure to collect fees is not a definite part of the student aid policy. The presence of an amount of uncollected fees at the end of the semester is certain evidence of faulty business administration. The failure to collect fees may be criticized not only because of the loss in revenue suffered by the college, but also because of the poor business training given students. A college, particularly one ostensibly aiming to inculcate Christian ideals, which allows students to acquire the idea that debts do not have to be paid, is certainly rendering a questionable educational service. As a form of student aid, it is thoroly vicious.

The sixth form of aid, student employment, is in a somewhat different category from the other forms discussed. The only type of employment which is referred to is that by the college itself; employment by individuals or firms outside the college, while serving the purpose of student aid, cannot be considered as a part of the provision made by the institution. While it may be argued that, from the standpoint of the college, full value may be received for the students' services and that therefore no aid in the usual sense of the term is extended, the facts are that, so far as the students are concerned, the prospect of employment serves exactly the same purpose as other forms of financial assistance.

Some of the officials of colleges recently surveyed would go so far as to question whether or not the aid given in the form of employment is not largely a gift. Many of those who are charged with the supervision of student labor report that it is rather inefficient; some are of the opinion that at least 50 per cent of the expenditure for student employment should be considered as an outright gift, rather than as payment for services rendered. Jobs which are sinecures have received some notoriety recently in connection with an investigation of athletics.[6] In some colleges, however, there is a conviction that with proper supervision student labor can be made equally as efficient as that of the regularly employed, full-time help.

Table XV presents data showing for thirty-six colleges the amount expended per student enrolled for each type of student aid under the control of the institution, and the total amount of aid per student enrolled given in these forms. Because of the difficulty of determining from the accounts of most of the colleges the amount of scholarship grants from endowed funds, as distinguished from the grants from current funds, these two forms of aid have been combined in a single category in Table XV. Designated current gifts for scholarship purposes are very rare in this group of institutions. They have also been combined with the category of "scholarships and remitted fees."

It will be observed in this table that the colleges show a wide variation, both in the total amount of aid per student enrolled, and in the amount given in each form.

Caution must be used in interpreting the causes of the variations shown in the amount of aid given per student in the institutions studied. The amount of financial assistance that is necessary in a given college is determined by several factors, among which may be mentioned: (1) the accessibility of other colleges and universities having lower tuition rates, such as state-supported institutions; (2) the economic level from which students are drawn; (3) practices with respect to student aid in neighboring colleges and universities; (4) the amount of tuition charged; and (5) opportunities for employment and loans from outside sources. Because of factors such as these, the efficiency of the program of student aid cannot be inferred directly from the amount of aid given. It is entirely possible that a college with a relatively large amount available for financial assistance to students is putting on an efficient program, while one with only a small expenditure for this purpose may be using its funds ineffectively. Four types of inefficiency which are commonly found in the administration of programs of student aid will be discussed.

Assistance from Wrong Sources

It will be noted from the foregoing discussion that there are three principal sources of the funds used in student aid: (1) trust funds; (2) specially designated current gifts; and (3) current funds. Aid from trust funds takes the form of either scholarship grants from endowed funds or loans from student loan funds. Specially designated current

[6] Howard J. Savage. *Op. cit.*, pp. 242-51.

TABLE XV. AMOUNT OF FINANCIAL ASSISTANCE TO STUDENTS PER STUDENT ENROLLED, CLASSIFIED ACCORDING TO THE FORM IN WHICH GIVEN, FOR THIRTY-SIX COLLEGES

College number	Scholarships and remitted fees	Student employment	Loans from college funds	Uncollected tuition fees	Total amount of student aid per student enrolled
1	$91.80	$12.31	$5.62	$9.80	$119.53
2	81.36	8.53	11.68	.....	101.57
3	11.75	40.63	38.72	.....	91.10
4	16.49	67.03	2.73	4.83	91.08
5	26.15	27.55	.....	28.54	82.24
6	32.43	24.40	.60	17.64	75.07
7	5.17	32.94	25.61	1.77	65.49
8	8.36	28.90	27.54	.....	64.80
9	34.49	28.97	.....	.....	63.46
10	11.46	31.95	18.51	.....	61.92
11	10.56	35.06	11.46	3.26	60.34
12	23.54	28.58	1.45	4.41	57.98
13	24.82	22.26	8.97	.74	56.79
14	21.22	25.33	6.14	.75	53.44
15	35.73	14.35	.....	3.25	53.33
16	10.25	30.79	1.66	7.77	50.47
17	28.53	13.05	1.75	5.35	48.68
18	12.39	25.01	6.07	4.72	48.19
19	18.87	22.10	3.78	.73	45.48
20	20.51	12.96	9.31	.13	42.91
21	28.17	13.13	.....	.....	41.30
22	19.13	19.26	2.15	.....	40.54
23	25.30	9.12	.....	4.87	39.29
24	23.97	13.31	.....	.65	37.93
25	4.69	14.31	.....	15.48	34.48
26	12.03	19.83	.....	1.02	32.88
27	8.22	8.93	.71	14.49	32.35
28	18.26	.....	.....	13.01	31.27
29	9.28	16.58	.....	.....	25.86
30	7.59	14.51	2.46	.....	24.56
31	7.90	6.87	3.62	2.18	20.57
32	5.01	9.44	.40	5.03	19.88
33	10.14	7.06	1.27	.24	18.71
34	12.73	2.64	.....	.....	15.37
35	11.91	3.38	.....	.....	15.29
36	5.68	3.65	.....	1.78	11.11
Median	$17.38	$15.55	$1.56	$1.40	$46.84

gifts are funds received for scholarship purposes, which presumably could not have been attracted by the college for general purposes. Aid from current funds simply means that out of the general resources available for the support of the educational program a certain amount is taken for purposes of student aid. Remitted fees come within this category; the supplementing of endowed scholarships so as to provide full tuition is sometimes a burden on the current funds; the failure to collect tuition fees is a third form of aid from current funds; and student employment must also be paid out of current funds.[7]

It is the contention of the writer that the first two of these are excellent sources from which to provide the support of the student aid program, but that the third source, namely, current funds, is a very undesirable means of providing student aid. The first reason for this conclusion is that aid provided from current funds (except that efficiently used in student employment) subtracts from the funds available for the support of the educational program. Endowed funds that are restricted for scholarship purposes, or special gifts designated for such use, would not in any event be available directly for the support of the educational program, and therefore these two forms of aid do not subtract from the amount available for educational purposes.

In the last analysis, the provision of student aid from current funds means that the members of the faculty have contributed a pro rata share of their salaries in order to aid the students who are given scholarships. This is a fact which is not usually understood by administrative officers, and is practically never brought to the attention of faculty members. An illustration may make the working of this principle clearer. Imagine an institution in which the enrolment and the size of the faculty have been stable for several years, with a ratio of fifteen students to one faculty member. Suppose that this college, in addition to its normal number of students, decides to admit fifty additional students with free tuition. The operating revenues of the college will remain the same as before. It will be found necessary, however, to employ two or three additional faculty members in order to care for the increased enrolment. (Some administrators will question this point, but the facts are that the ratio of students to faculty is a rather stable affair, and most institutions actually do make corresponding increases in the teaching staff when increases occur in enrolments.) In order to provide salaries for the additional staff members in this hypothetical college, the operating revenues remaining constant, each of the former faculty members will be obliged to accept a lower salary than he formerly received (assuming that the personnel of the faculty remains the same). It may be argued that the budget might be balanced by a cut in some of the other items; but, since faculty salaries form the largest single item, and also since normally this is in the long run one of the most elastic items in the budget, the greater part of the burden necessarily falls here. The illustration has been greatly over-simplified, but shows in general how the provision of student aid from current funds operates.

[7] In some colleges there are endowed "workships," the income of which is used to pay the wages of students employed by the institution.

The conditions that make the operation of this principle somewhat obscure in the average institution will be briefly mentioned. (1) The student aid program is traditional, and its subsidy involves no radical change from past experience. (2) Normal turnover in faculty personnel makes it possible to adjust the burden so as not to involve a direct contribution by those who have long been connected with the college. (3) The contribution of faculty members usually takes the form of failure to obtain salary increases commensurate with increases in institutional operating income from sources other than students. (4) In many cases the curtailment of the program of student aid, which would be necessitated by refusal to use current funds for this purpose, would result in a reduction in enrolment. This should normally result in a corresponding reduction in the number of faculty members, but all too frequently it is not possible or expedient to reduce the number of faculty members when a decrease occurs in enrolment. Consequently, if the administration takes the position that its faculty must not and will not be reduced in size, the argument appears on the surface to be valid that the additional students allowed to enter without payment of fees are in effect causing no additional burden.

Despite the obscurity of the operation of this principle in the ordinary processes of college administration, it must be concluded that in the last analysis the faculty members themselves contribute from their own salaries a large part of the amount necessary to support the student aid program from current funds. It is doubtful whether the contribution would be made cheerfully if faculty members were presented with a careful analysis of the exact operation of the program of student aid as found in many colleges.

The second reason for considering current funds an undesirable source for aid to students is the fact that it is usually much easier to obtain special gifts or trust funds for this purpose than for the general, undesignated needs of the institution. The current funds available for the support of the educational program are built up principally from income which is undesignated. Many donors prefer to give for some special object rather than to the general endowment funds of the college. To use for purposes of student aid these general funds, which are always obtained with considerable difficulty, is therefore unwise, because funds for student aid can usually be obtained much more easily by direct appeal to interested donors.

From these two considerations, namely the fact that faculty salaries must in the last analysis stand a large part of the cost of student aid paid from current funds, and the fact that funds for student aid may be obtained directly from donors with much greater ease than general and undesignated funds, it follows that an ideal program of student aid would be one in which the sources of the support are trust funds (endowed scholarships or loan funds) or current gifts especially designated for this purpose.

Assistance Given in Wrong Form

The second of the four principal types of inefficiency found in the administration of the program of student aid is the giving of subsidy in a

wrong form. Referring again to Table XV, it will be noted that there are four typical forms in which the aid is given: (1) an outright gift; (2) a loan; (3) a cancellation of debt; (4) remuneration for service. The forms involving outright gifts are scholarships and remitted fees, whether paid from endowed funds, special gifts, or current funds. Possibly a portion of the payments for student employment should be considered as outright gifts. The loans here considered are only those under the control of the college, and do not relate to funds that are generally available without being under the control of the college. The third form, cancellation of a debt, results from the failure to collect fees due. A part of the aid given in this third form should actually be considered as a loan, since colleges that fail to collect fees at the close of the semester in which they are due are sometimes able to collect a considerable portion of the amount eventually. In such cases the process actually involves a forced loan from the current funds of the college. In cases that are finally written off as uncollectable, the transaction has actually involved a theft, so far as the student is concerned. While colleges sometimes recover uncollected tuition long after the student has left the institution, such a collection is very much like the "conscience fund" that is found in many business concerns.

In the opinion of the writer, it is clear that the giving of funds in this third form is indefensible, either from the standpoint of the business procedures involved, or from that of the training given students.

Whether the aid should be given as an outright gift, or as a loan, or as remuneration for employment is not so clear. Reeves and Russell have discussed this point.[8] In the institutions which have recently been surveyed there seems to be a definite trend toward giving more of the aid in the form of a loan and less in the form of outright gifts. In several of the colleges the survey staff recommended that the program of aid be developed in such a way as to increase the proportion given as a loan. The decision on this point is much more related to matters of social policy than to the efficiency of college administration. Neither of the two forms necessarily involves any inefficiency.

Failure to Relate Aid to Need of the Student

The third type of inefficiency frequently found in the administration of programs of student aid is the failure to relate the aid to the actual needs of the individual. In most colleges certain general classes of students are automatically entitled to free or partially free tuition. The classes most commonly granted this privilege are the sons and daughters of ministers, and students who are preparing for the ministry. It may be that the blanket offer of a reduction in fees to these classes rests upon the conviction that in most cases these classes have real need of the aid. Even if this be granted, the fact remains that there are wide variations in the resources of the persons belonging to these groups. The son

[8] Floyd W. Reeves and John Dale Russell. *College Organization and Administration.* Board of Education, Disciples of Christ, Indianapolis, 1929, p. 289.

of a minister receiving a relatively high salary in a large city church is automatically given the reduction in tuition, just as is the son of a minister whose charge is a small country church. Similarly, it is doubtful if all those who are preparing for the ministry are equally in need of financial aid. The whole plan of "ministerial rebates" in colleges having a denominational relationship seems little removed from certain forms of graft which are roundly condemned in civic government.

There is actually a fifth form of student aid commonly given that is not treated in Table XV. This form is the postponement of payment of fees until late in the term. An attempt was made to collect data on the extent of this practice, but in none of the colleges was the accounting system so set up as to yield the information without an unreasonable amount of labor. It may be stated, however, that in many colleges the practice of allowing students to postpone the payment of fees is followed. In some colleges the necessity for this postponement is not adequately investigated, and the privilege has come to be looked upon by students as one of their rights. One college that has investigated this matter reports that students who have money enough to pay their fraternity dues at the opening of the year will not infrequently ask the college to wait until near the close of the semester for the payment of tuition fees. Occasionally students whose parents have given them the funds with which to pay full tuition request a postponement because of a desire to use the money for purposes of their own. In such cases there is sometimes a considerable amount of embarrassment before the final collection is made.

As a general rule it is wise to investigate fully all requests for aid of any type, in order to ascertain that a real need exists. Some colleges follow the plan of requiring each student who requests aid to make out a budget for the year and to talk this over with the business officer before the aid is granted. The mere fact that such a requirement is made is sufficient to discourage requests from most students who do not merit assistance. Sometimes the device is used of requiring a statement from parents regarding the necessity of the aid. Most colleges that have a well administered program of student aid have found it necessary to make careful inquiry into the actual financial needs of the student before granting any assistance.

Assistance to Wrong Type of Student

The fourth type of inefficiency commonly found in the administration of the program of student aid is the giving of subsidy to the wrong type of student. It should be a cardinal principle of the program of student aid that assistance will be given only to those who are good academic risks. This does not necessarily imply that aid should be given only to those who make brilliant scholastic records. It is clear, however, that a student whose record is such as to indicate that he will ultimately be unable to graduate from the college without loss of time should not ordinarily be encouraged to continue in the institution by a grant of financial aid. In some colleges recently surveyed studies of the types of students aided show that large numbers of those receiving aid are below the gen-

eral average of the college in scholarship, and in many instances are below the level required for graduation.

Not only should the student who is aided be a good academic risk, but his citizenship in the college should be above suspicion. In one institution surveyed a few years ago it was found that a large percentage of the disciplinary cases coming before the faculty were connected with students holding scholarships. It was evident in this college that greater attention was needed in the selection of the recipients of scholarship grants.

It is probable that insufficient discrimination is being employed in giving assistance to students with reference to their ultimate vocational objectives. With the single exception of the ministry, it is very unusual to find that aid is given with any reference whatsoever to the vocational field for which the student plans to prepare. Too little is now known regarding the demand for workers in the various occupations for which the college trains to allow much intelligent discrimination to be used. For example, if the supply of well-trained teachers is greater than the demand, it is probably a mistake to encourage students to prepare for teaching by giving them grants of aid. The possibilities for the use of the program of student aid as an instrument for social and economic control are important, altho at present almost completely undeveloped.

Summary

A certain amount of financial assistance to students is necessary in almost all colleges. The argument is made that expenditure for this purpose should not be considered as performing an educational function. Six different types of aid to students are noted, classified according to the form and the source from which derived: (1) endowed scholarships; (2) scholarships from current funds (remitted fees); (3) scholarships from specially designated current gifts; (4) student loan funds; (5) failure to collect fees charged; and (6) student employment. Four types of inefficiency in the administration of student aid are noted: (1) assistance derived from the wrong sources; (2) assistance given in the wrong form; (3) assistance unrelated to the financial needs of the student; and (4) assistance given to the wrong type of student.

CHAPTER IX

INEFFICIENCIES IN THE GENERAL PROGRAM OF HIGHER EDUCATION

THE discussion thus far has related to the inefficiencies found within the various colleges studied. There are certain types of inefficiency that relate, not to the internal management of the colleges, but to the general organization of the whole program of higher education.

It is perhaps a mistake to use the word "organization" when referring to the provisions made in this country for college training. The program is certainly not an organized one in the country as a whole, and even within smaller areas there is every evidence that no conscious organization exists for the oversight of the general service of higher education. It is true that the various states foster programs of higher education, but in most of them the existing tax-supported institutions can scarcely be called an "organization." Even in systems with a fairly large measure of unified control, it is apparent that such matters as the location of institutions and the measure of their support are all too frequently the result of political manœuvres rather than the outcome of definite educational planning.

When the institutions that do not receive support from taxation are considered as a group, it is apparent that the condition approaches chaos. Each college is to a large extent a law unto itself in the determination of its right to exist; the continuation of the institution is usually the supreme goal of its own existence, with service to higher education pushed into secondary importance as the basic aim of the institution. Altho in most states institutions operate under charters or articles of incorporation granted by legislatures or other designated authorities, almost never is the need for the establishment of a new college subject to review by any agency capable of studying the matter from an educational point of view.

It is occasionally necessary in a survey to suggest that a college ought to close. Such a recommendation is usually based upon an analysis not only of conditions within the institution, but also of the potential service that can be rendered to the constituency. Such a suggestion is nearly always a most unwelcome one; boards of trustees, administrative officers, and faculty members are prone to look upon the continuation of the college as of far greater importance than any desirable reorganization of the program of higher education in their region.

Agencies Modifying the General Program

Four agencies may be noted, all of which have operated to modify the program of non-tax-supported higher education. These are the state departments of education, the regional accrediting associations, the cen-

tral educational authorities of the various church groups, and the endowed foundations. The general tendency in the operation of most of these agencies has been to make it easier for the strong institutions to survive and, at least indirectly, to make it more difficult for the weaker colleges to continue their existence.

In recent years the improved standards for teacher training have led many states to "accredit" institutions so that their graduates may be certified as teachers. Since most liberal arts colleges train teachers in considerable numbers, it has been necessary for them to meet state standards for teacher training.

Accreditation by the regional standardizing association has come to be a question of life or death to any college located in an area in which relatively ample facilities are offered for higher education. Today no college can hope long to survive without regional accreditation unless it is located so as to serve a fairly large population group that is without other facilities for higher education of standard grade.

Most religious denominations that sponsor an educational program have central or regional boards which distribute appropriations and exert some measure of supervisory control over the institutions supported. Limbert[1] has compiled a list of the purposes and powers of denominational agencies of higher education. In general the functions of these agencies are largely advisory, altho there is frequently the important duty of distributing funds to the various institutions under their control.

The endowed foundations, in making gifts to the permanent funds of certain colleges, have generally tended to select from among the applicants those that have strong probability of survival and a real opportunity for educational service.

These agencies, particularly the state departments of education, the regional standardizing associations, and the educational foundations, have clearly operated with a tendency to build up the strong institutions, a sort of "speeding up" of the process of natural selection, to use a biological analogy. While the influence of these agencies has been noticeable, it has not been in operation long enough to be brought to full fruition. Indeed, some of the foundations seem to be withdrawing their share of the influence by the decision to direct their funds largely into other channels.

Thus it may yet be said that the service of higher education is in a chaotic state, so far as any organized, carefully thought out plan for this service for the country as a whole is concerned. Whether American higher education is better off left as it is for development thru the individual programs of many separate and uncoördinated institutions than it would be if administered with a considerable degree of centralized control, such as that prevailing generally in the public school system at the elementary and secondary levels, is a question which cannot now be answered on other than theoretic grounds. There are certain manifest inefficiencies in the program as a whole under present conditions that

[1] Paul Moyer Limbert. *Denominational Policies in the Support and Supervision of Higher Education.* Bureau of Publications, Teachers College, Columbia University, New York, 1929, p. 51.

deserve some consideration, even tho there is no adequate agency for correcting them. A few of these inefficiencies will be discussed in this chapter.

Poor Geographical Distribution of Colleges

In surveys of public school systems a familiar technique is to provide a map of the district studied, with a spot representing the residence of each pupil and with a circle (whose radius is the standard travel distance) surrounding each school building. Such a map quickly reveals the areas which have not been adequately provided with buildings as well as those in which buildings have been located too thickly.

Many colleges construct such maps for their own student bodies; but the writer has never seen one showing all the institutions of higher learning in a large area, such as two or three states. It is easy to imagine what such a study would reveal. There are many areas in the United States where there is a clustering of colleges entirely out of proportion to the size of the population within the area. There are other areas that are provided with reasonably adequate college facilities. There are possibly some areas in which a fairly large population group is without easily accessible institutions of higher learning.

It may be argued that the case of the college is different from that of the public elementary or secondary school, since the institution of higher learning customarily draws a large number of its students from long distances. This is of course true; and such matters as alumni influence, specialization of curriculums, educational traditions, and denominational connection often operate to cause students to turn their backs on a college near at home in order to travel long distances to attend a college of their choice. On the other hand, in many of the most important colleges and universities there is a majority of the student body whose homes are within fifty miles.

In a group of thirty-nine colleges recently surveyed, with a total enrolment of more than 20,000, almost exactly half (50.1 per cent) of the students live within fifty miles of the institution they attend. The other half of the students travel more than fifty miles in order to attend the institution of their choice.

The matter of travel distance may be considered with the institution, rather than the student, as the unit. Table XVI presents data for the same thirty-nine colleges showing the percentage of the student body residing within fifty miles of the institution attended.

This table shows that in approximately half of these thirty-nine colleges 50 per cent or more of the student body is drawn from within a radius of fifty miles. The institutions in this table that draw less than one-half of their students from within the fifty-mile zone all fall within one or more of the following categories: (1) colleges that are old and well established; (2) colleges with relatively large endowment; (3) colleges that are not located in or near any important center of concentrated population; and (4) colleges that have important local competition. In general it appears that, if a college does not have resources and reputation sufficient to class it among the better institutions of its

TABLE XVI. DISTRIBUTION OF THE PERCENTAGES OF REGULAR YEAR FULL-TIME STUDENTS AT THIRTY-NINE COLLEGES RESIDING WITHIN FIFTY MILES OF THE INSTITUTION ATTENDED

Percentage of students residing within fifty miles of institution	Number of colleges
More than 90 per cent	1
80.1 to 90.0 per cent	3
70.1 to 80.0 per cent	6
60.1 to 70.0 per cent	3
50.1 to 60.0 per cent	6
40.1 to 50.0 per cent	10
30.1 to 40.0 per cent	8
20.1 to 30.0 per cent	2
48.6 per cent	Median*

*Median calculated from an ungrouped distribution.

section of the country, it is necessary for it to be so located that it is relatively free from local competition, with a large local population group to serve as the nucleus for the student body. Since relatively few colleges attain to a degree of excellence such that they are able to attract many students from long distances (in excess of one hundred miles), it follows that for most colleges a location in or near a large city or other concentration of population is necessary in order to provide a student body of reasonable size.

A generation or two ago the small country town or village was considered as the ideal location for an institution of higher learning. There the scholarly minded student could go and spend his college days without being disturbed by the distracting influence of the large city. There has been a marked change of attitude on this point in recent decades. The increasing urbanization of the population has brought a large measure of disregard of the supposedly vicious influence of the city upon the character of the youth. The colleges have come to recognize the important supplementary educational facilities afforded only in the city, such as art galleries, dramatic productions, musical concerts, libraries, museums, etc. The development of interest in the social studies has made it important to have available working laboratory conditions for the observation of sociological and economic phenomena, many of which can best be found in the large population center.

The matter of location of colleges may be placed on a "travel-distance" basis. An interesting study could be made of the amount of waste involved in poorly located institutions because of the excessive travel that is forced upon students.

It is clear that all these conditions point to the necessity for a relatively important local concentration of population in order to justify the location of a college. In certain broad areas that are remote from any population center there is probably some justification for the estab-

lishment of a college on the basis of necessary service, but in such cases the institution is at a clear disadvantage and usually such colleges find the struggle for existence severe. In the greater part of the country the youth of the population generally would suffer no diminution of their opportunities for higher education if all institutions of college grade were located in or near relatively important centers of population, such as would be provided by cities of 25,000 or more inhabitants.

Enrolments Too Small for Efficient Administration

In the preceding chapters of this study attention has frequently been called to the inefficiencies which are introduced into the college program when the enrolment is small. Reeves and Russell have determined that there is little increase in efficiency of operation after an enrolment of 750 students is reached, and that the difference in efficiency between colleges having 500 students and those having 750 is not marked. When the enrolment falls below 500, however, costs tend to mount sharply, the quality of education being held constant.[2]

In some measure the size of the enrolment is within the control of the college itself, and this item may justly be considered as contributing to inefficiency in internal administration. To a large degree, however, the size of the enrolment is determined by the available student body within the territory served and the number and relative prestige of the other colleges that draw upon this same clientele. Thus the inefficiencies due to a small enrolment are in considerable part traceable to unfortunate location. If there were in existence some general supervisory agency with power of life and death over colleges, it might be possible to increase markedly the general efficiency of the program by the elimination of many institutions whose enrolment is too small to justify their continuance.

It is recognized that many outstanding colleges have adopted the policy of limiting the number of students and of carefully selecting the matriculants. In some cases the desirable size of the student body has been set at a figure below that which will provide an economical operating unit. Such institutions in general have ample endowment and need not concern themselves particularly with economies.

Recognition must also be given the opinion frequently held to the effect that the smaller the enrolment the better the educational program. Objective evidence that might shed light on this controversy seems to be lacking. In the absence of definite evidence to support the contention that a student of a given level of ability gets more out of his education in a small college than in one with an enrolment of from 500 to 750, the criticism of the lack of economy in the smaller institution must stand.[3] It is interesting to note that, while the colleges which have been able to limit their enrolment to a small figure have in general been those with

[2] Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence.* Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, 1929, pp. 33-4.

[3] Cf. John B. Johnston. *The Liberal College in Changing Society.* The Century Company, New York, 1930, pp. 303-4.

ample endowment, many of the institutions which have proclaimed the small size of the student body as one of their prime virtues have been using every available means to increase their enrolments.

Overlapping of Recruiting

The question of uneconomical methods of student recruiting has already been discussed. There is a phase of this question, however, that relates to the program of higher education as a whole. In many parts of the country the colleges are in as intense a competition as that faced by any group of commercial concerns. Under such circumstances the colleges feel forced to spend considerable effort in recruiting students. If the program of student solicitation is curtailed, the enrolment immediately suffers.

If there were available a central agency for the oversight of the program of higher education as a whole, it is easy to imagine that one of the first steps would be the elimination of this costly recruiting service, or at least its restriction to the natural territorial limits of the various colleges. Such a step would in no way lessen the educational opportunities for the young people of the country, and would result in considerable savings thru the elimination of wasteful overlapping in the recruiting service.

Summary

The program of higher education in this country does not represent any logical organization of the resources available for this purpose. Instead there is a chaotic group of institutions, highly individualistic in their aims, each seeking its own perpetuity as its highest goal. While agencies such as state departments of education, the regional standardizing associations, the central denominational boards of education, and the endowed foundations have had some influence in bringing an external pressure to bear upon the colleges of the country, the program as a whole is entirely uncoördinated. This condition entails certain wastes and inefficiencies, among which may be mentioned: (1) poor geographical distribution of colleges; (2) enrolment too small for efficient administration; and (3) overlapping of student recruiting activities.

PART III

A TECHNIQUE FOR ESTIMATING THE AMOUNT OF EFFECTIVE EDUCATIONAL EXPENDITURE PER STUDENT

CHAPTER X

INEFFICIENCIES EXPRESSED IN FINANCIAL EQUIVALENTS

THE foregoing discussion of the types of inefficiency commonly encountered in colleges raises two interesting questions: (1) What is the amount of annual non-effective expenditure in a given college? (2) What would the per capita expenditure be in the college if all excessive costs due to inefficiency were eliminated? An answer to the first question would yield an index of efficiency of management. An answer to the second should result in an improved measure of the quality of the educational program. These two objectives are of sufficient importance to warrant the development of a technique for calculating the expenditure that is due to inefficiency in management, and for estimating the effective educational expenditure per student.

The Use of Current Educational Expenditure as a Measure of Efficiency

It will be noted that the foregoing proposal deals with financial expenditure rather than income. The present standards of the regional accrediting associations, on the contrary, relate to income from certain specified sources, rather than to expenditure. Reeves and Russell have shown that excellence in an institution of higher learning (measured by the independent criterion of the judgments of experts who were thoroly acquainted with the institutions studied) is much more closely related to the educational expenditure per student than to the per capita income from any selected group of sources.[1] This is entirely logical. The important factor in guaranteeing a good educational program is that enough money be spent to provide it; the nature of the sources of income is of secondary importance. In this present study, therefore, expenditure is dealt with instead of income.

The immediate concern of this study is with the educational program of the college. While some discussion has been presented relating to certain of the non-educational activities, such as providing financial aid to students and operating supplementary business enterprises, they are of concern in this study only as they affect the amount available for the support of the educational program. It therefore follows that all expenditures should be eliminated from consideration except those that are strictly educational in nature.

A sharp distinction between educational and non-educational expenditure is difficult to make. There is a border zone in which the rendering

[1] Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence.* Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, 1929, p. 30.

of a real educational service is debatable. As a practical matter the classification of these border services is of little importance, since the total expenditure per student for all such services is usually a very small part of the total for the college. On the major items of expenditure little or no disagreement exists with regard to the educational or non-educational classification.

In accordance with generally accepted terminology, and also in the light of certain arguments advanced earlier in this study, the following functions are considered as educational: (1) instruction, including instructional salaries, payments into annuity and pension funds for members of the teaching staff, and instructional supplies and equipment (of a non-capital nature); (2) administration; (3) library; (4) operation and maintenance of the academic plant; and (5) student welfare. The functions that are excluded as non-educational are: (1) student recruiting and publicity; (2) management of supplementary business enterprises; (3) subsidization of interscholastic athletics; (4) payment of interest on indebtedness; (5) financial assistance to students; (6) management of endowment and other trust funds; (7) costs of carrying annuity contracts; and (8) expenses of financial promotion. These non-educational expenditures are given no further consideration in this study.

Three Basic Types of Non-Effective Expenditure

The most important instances of inefficiency which have been discussed in the preceding chapters relate primarily to three of the educational functions: administration, plant operation and maintenance, and the instructional service. These three functions comprise the largest items in the educational expenditure and together account for more than 90 per cent of the total in every college studied. There is therefore more opportunity for inefficiency in these items than in the functions that demand only a small expenditure per student.

It will be noted that, in the discussion presented in Part II of this study, nothing has been said relative to non-effective expenditure in the function of student welfare. While it is probably true that some colleges are wasting funds in this function, the relatively small amount devoted to this purpose indicates that important inefficiencies could not occur at this point. In general, it is the writer's observation that the student welfare service is suffering from too small an annual expenditure in most colleges, rather than from an excessive and wasteful outlay of funds.

The most important instances of inefficiency that affect the expenditure for strictly educational purposes, as described in Part II of this study, may all be comprehended under three types: (1) too large an expenditure of funds for administration; (2) too large an expenditure of funds for plant operation and maintenance; and (3) too large a proportion of small classes.

The following types of inefficiency, as discussed in Part II, all tend to result in a larger expenditure for administration than would otherwise be the case: (1) overstaffing in administrative positions; (2) excessive administrative salaries; (3) undue provision of clerical help; and (4) inefficient office routines. The items of waste discussed in Part II under the heading of financial administration relate either to income items, or

to non-educational items, or to purchasing. Altho it is true that failure to receive a potential income is a source of inefficiency, this present study is concerned only with expenditure items. Ineffective purchasing methods will be revealed in excessive costs for supplies and equipment. This will in turn be reflected in increased expenditure for administration, for building operation and maintenance, and for instructional supplies. The present technique does not permit the calculation of excessive costs for instructional supplies due to poor purchasing methods. The item, however, is comparatively small.

The following types of inefficiency, as discussed in Part II, tend to result in an excessive expenditure for plant operation and maintenance: (1) low degree of space utilization; (2) excessive heating charges; (3) excessive cleaning costs; (4) unwise insurance plans; and (5) excessive maintenance costs. Excessive capital outlay for new buildings is, of course, not a current educational expenditure.

The following types of inefficiency, which were suggested in Part II under the heading of the instructional program, tend to be reflected in a high percentage of small classes: (1) overstaffing in faculty; (2) over-extension of number of departments; (3) over-expansion of course offerings; and (4) overlapping of content of courses.

It will be noted that the inefficiency involved in light instructional loads has been deliberately omitted. This has been done for three reasons: (1) Generally accepted standards of teaching loads have not yet been validated by scientific experimentation. It is entirely possible that an instructor with an eight-hour teaching assignment may actually give a larger amount of effective instruction than one with a sixteen-hour load. (2) It is extremely difficult to account properly for duties other than teaching. In some colleges a certain amount of scholarly production is expected of faculty members; in such cases the teaching load is sometimes reduced for men who have a heavy program of writing or research. (3) Criticism of light teaching loads must be made with a knowledge of the amount of money available for faculty salaries. In an institution in which there are 600 credit-hours of teaching per semester, a faculty of forty members might be employed for an average load of 15 hours of teaching; or the plan might be to use a faculty of fifty members, with an average load of 12 hours each. Assuming the total instructional salary budget to remain constant, the average faculty salary will be 25 per cent less if fifty instructors are used than if only forty are employed. If the amount available for faculty salaries is small, the smaller faculty organization is probably more economical than the larger. As the total amount available for faculty salaries increases, and as the average salary paid more nearly approaches a satisfactory level, the economy of the smaller faculty organization becomes less and less, and finally disappears.

One assumption underlying the decision to omit light teaching loads as a form of inefficiency may be questioned, namely, that faculty members give their entire energies to the service of the college. In practice this is almost never true. The margins of the instructor's time are usually considered as belonging to him. How wide the margin should be is a question that has never been satisfactorily answered, and upon

which the writer has no contribution to offer. It will be conceded that, if a reduction in average teaching load means only an increase in the margin of time which the instructor may use for purposes unconnected with scholastic pursuits, there is no gain, and probably a loss, in reducing the teaching load in terms of number of credit-hours taught. On the other hand, if thru a reduction in teaching assignments the instructors spend more time upon their other classes, or use the time for writing, research, and other forms of productive scholarship, the service of the teachers to the college may be effectively increased. There is opportunity for efficiency of administration to be displayed in the stimulation of faculty members to greater scholastic productivity, but the degree of efficiency on this point does not readily yield itself to statistical treatment.

The remaining types of inefficiency in individual college programs, which have been discussed in Part II, are not considered here either because they are non-educational in character and thus are eliminated from the total, in which only educational expenditures are included, or else because they are items affecting the income of the college rather than its expenditure. The types of inefficiency involved in the program of higher education as a whole cannot be taken into account in analyzing the situation within a given institution.

Summary

The proposed technique for estimating the amount of effective educational expenditure per student deals only with expenditure items, excluding inefficiencies involved in a failure to receive income. The study deals only with educational expenditure, as opposed to that which is non-educational in character. It is shown that, with one minor exception, all the instances of inefficiency that have been discussed in Part II, so far as they affect educational expenditures, may be comprehended in three basic types: (1) excessive expenditure for administration; (2) excessive expenditure for plant operation and maintenance; and (3) an excessive proportion of small classes.

CHAPTER XI

METHOD OF CALCULATING THE AMOUNT OF EFFECTIVE EDUCATIONAL EXPENDITURE IN A COLLEGE

THE technique for computing the effective expenditure for educational purposes in a college consists of five steps. The first step is the computation of the amount of non-effective expenditure devoted to the function of administration. The second step is the computation of the amount of non-effective expenditure devoted to the operation and maintenance of the physical plant. The third step is the computation of the amount of non-effective expenditure devoted to the direct instructional service. The total non-effective expenditure is obtained, as a fourth step, by adding together the results from the three previous steps. The total effective educational expenditure is obtained, as a fifth step, by subtracting the sum obtained in step four from the total educational expenditure.

In order that results may be comparable among colleges, it is necessary that they be expressed in unit terms. Educational expenditure per student seems to be the most convenient unit, and has accordingly been used in this study. The divisor unit in this case is "average enrolment," obtained by averaging the enrolment of the two semesters of the academic year with part-time students added in at their equivalent in terms of full-time students. The unit of enrolment is one student in full-time attendance for an academic year of nine months. Neither the financial statistics nor the enrolment figures contain data for anything except the campus work of the nine-month year, summer session and extension work being excluded entirely from consideration.

Method of Computing the Amount of Non-Effective Expenditure Devoted to the Function of Administration

Attention has already been directed (see Table V, page 42) to the fact that the administrative expenditure per student differs markedly among the institutions for which data are presented. Each of these thirty-four colleges has been carefully studied by a survey staff which is competent to pass judgment upon the relative merits of the administration in each of the institutions.[1] In the survey reports for some of

[1] The actual competence of the survey staff in this instance is not a pertinent matter, since this study does not purport to set final standards. The only intention is to illustrate the technique to be used in developing the standards.

these colleges the administrative organizations were criticized adversely and suggestions were made for larger expenditure for this service. In other colleges surveyed, exactly the opposite criticism was made. It should be possible, when three or four qualified staff members have passed judgment on the administration in each institution, to pick out the colleges that are adjudged to have good administrations; from the data on expenditure per student for this function, it is then possible to pick out the one institution with an effective administration that has the lowest cost for this service. Any college that is spending more than this amount per student for its administration is not using effectively the excess expenditure. Any institution that is spending less should be encouraged to provide larger support, in order that its administration may be improved in effectiveness. The college having the lowest cost per student for an effective administration thus becomes a standard by which all other colleges are judged.

It will be admitted at the outset that the group of thirty-four colleges included in this study is probably too small for the final setting of standards. The writer is here concerned with the development and illustration of a technique rather than with the setting of absolute standards. It may be pointed out, however, that the type of standard here suggested can probably never be absolute. It will be in constant need of revision as conditions change and as new developments occur in higher education. The writer's only contention is that the method herein outlined offers a satisfactory technique for the setting of standards of efficiency.

Table XVII presents data regarding expenditure per student for administration in thirty-four colleges, together with the computation of the amount of non-effective expenditure due to excessive administrative costs. As has previously been explained, the expenditure for administration includes the cost of the president's office, the portion of the cost of the business office which is chargeable to the educational program, and the cost of the registrar's office.

In this table college Number 31 is chosen as the standard with reference to expenditure for administrative purposes. The members of the survey staff who visited these institutions are unanimous in pronouncing it one of the best administered colleges in the group. None of the three institutions having a lower expenditure than college Number 31 was free from adverse criticism on the item of administration, and in their surveys definite recommendations were made which would result in a larger expenditure for the function of administration.

It should be pointed out that some of the colleges which have a relatively large expenditure for administrative service actually have a less effective administration than the institution selected as the standard. In such cases the actual amount of non-effective expenditure is probably in excess of the amount shown in the final column of Table XVII, since in this table it was presumed that the first $26.14 spent for administrative purposes is used effectively. Similarly the zero entries in this column do not necessarily indicate absolutely no non-effective expenditure, but only that there is none which is due to an excessive administrative cost. It is recognized that there is a minor weakness in the technique at this point,

TABLE XVII. EXPENDITURE PER STUDENT FOR ADMINISTRATION IN THIRTY-FOUR COLLEGES, AND AMOUNT OF NON-EFFECTIVE EXPENDITURE DUE TO EXCESSIVE ADMINISTRATIVE COSTS

College number	Expenditure per student for administration	Minimum non-effective expenditure due to excessive administrative costs
1	$64.65	$38.51
2	62.72	36.58
3	56.58	30.44
4	55.13	28.99
5	54.61	28.47
6	52.63	26.49
7	49.36	23.22
8	47.56	21.42
9	45.79	19.65
10	43.94	17.80
11	42.03	15.89
12	40.15	14.01
13	39.90	13.76
14	39.88	13.74
15	39.16	13.02
16	38.54	12.40
17	36.84	10.70
18	35.76	9.62
19	35.50	9.36
20	35.37	9.23
21	33.95	7.81
22	30.63	4.49
23	30.19	4.05
24	29.37	3.23
25	29.30	3.16
26	28.94	2.80
27	28.15	2.01
28	27.50	1.36
29	27.16	1.02
30	26.65	.51
31	26.14	0
32	23.53	0
33	23.13	0
34	20.81	0

since the "non-effective expenditure due to excessive administrative costs" does not reflect a certain amount of non-effective expenditure that is known to be present because the function is not as well performed as in the standard college. Altho the inefficiency that, for this reason, is unaccounted for by the technique is believed to be comparatively small, the

figures in the final column of Table XVII should be interpreted as the minimum amount of non-effective expenditure in the function of administration.

A method may be suggested whereby a correction could be applied to overcome the minor weakness pointed out in the preceding paragraph. A committee of experts, thoroly familiar with administrative practice in educational institutions, could rate or "grade" the administration of each college for effectiveness. Each college spending more than the standard amount for administration could then be assigned a certain percentage of this amount in accordance with the ratio of its rating to that of the standard college. Since the institution chosen as a standard has, by definition, an effective administration, it would be rated at 100 per cent. A college with an administration rated only three-fourths as good, if it spends more than the standard college for this service, will be credited with only 75 per cent of the standard expenditure for this function. This technique has not been developed further in the present study because complete data are not at hand for assigning the ratings. It should be noted that this refinement of the technique cannot well be applied by the college to itself, but would be of value principally to an outside agency interested in estimating the educational excellence of the institution.

Method of Computing the Amount of Non-Effective Expenditure Devoted to the Function of Operation and Maintenance of Plant

It has already been pointed out (see Table VIII, page 62) that the colleges spend widely varying amounts per student for the operation and maintenance of the physical plant used for academic purposes. As in the case of the function of administration, the members of the survey staff are qualified to pass judgment upon the conditions found in the academic plants of these colleges. It is therefore possible to pick out the one institution that has the lowest cost per student for this function and at the same time carries on the function in a reasonably satisfactory manner.

Table XVIII presents data regarding expenditure per student for plant operation and maintenance in the thirty-four colleges, together with the computation of the amount of non-effective expenditure due to excessive costs for this function.

College Number 5 has been chosen in this table as the standard with reference to expenditure for purposes of plant operation and maintenance. This institution enjoys three advantages in the performance of this function. In the first place, its plant is for the most part comparatively new and well built, and consequently heavy maintenance charges do not arise. In the second place, it is in a region where winters are not severe, and consequently less fuel is necessary. In the third place, it is in a region close to coal mines and therefore enjoys the benefits of a low freight rate on its fuel. At each of the other colleges having a lower cost per student for this function than college Number 5 there are valid reasons why the institution should not be considered as a standard for this item.

TABLE XVIII. EXPENDITURE PER STUDENT FOR PLANT OPERATION AND MAINTENANCE IN THIRTY-FOUR COLLEGES, AND AMOUNT OF NON-EFFECTIVE EXPENDITURE DUE TO EXCESSIVE COSTS FOR THIS FUNCTION

College number*	Expenditure per student for plant operation and maintenance	Minimum non-effective expenditure due to excessive costs for this function
15	$61.21	$27.67
14	61.09	27.55
9	57.92	24.38
3	49.58	16.04
32	48.89	15.35
16	45.77	12.23
33	42.61	9.07
19	41.29	7.75
8	41.10	7.56
12	40.59	7.05
25	39.58	6.04
22	39.00	5.46
6	38.82	5.28
13	38.81	5.27
17	38.79	5.25
27	38.27	4.73
10	37.55	4.01
31	37.28	3.74
34	36.70	3.16
11	35.05	1.51
20	34.97	1.43
5	33.54	0
24	32.91	0
4	32.79	0
18	32.15	0
7	28.99	0
1	28.60	0
2	27.51	0
21	25.16	0
28	23.80	0
29	23.65	0
26	23.47	0
23	15.67	0
30	10.56	0

*Each institution is given the same number it carried in Table XVII.

As was pointed out in connection with the discussion of non-effective expenditure for administration, the final column of Table XVIII presents data that reflect only the *minimum* of non-effective expenditure for this function. The technique allows each college with a higher expenditure than the standard to count the amount of the standard as effective expenditure, altho in many cases the plants were not as satisfactorily maintained and operated as in the standard college. Thus no account is taken of expenditure that is below the standard amount, but which may be non-effective because it does not result in a satisfactory performance of the function. This minor weakness in the technique makes it necessary to interpret the data of the final column of Table XVIII as the *minimum* non-effective expenditure for this function.

This weakness could be corrected by applying the same type of refinement to the technique as was suggested in the case of administrative expenditures. The colleges could be rated by experts on the quality of their plant services, the one chosen as standard being given a rating of 100 per cent. Each institution spending more than the standard amount for plant operation and maintenance, instead of being credited with the entire amount of the standard, could be assigned only the proportion indicated by the ratio of its rating on plant service to that of the standard college. This refinement of the technique has not been applied in the present treatment because of the lack of adequate data for assigning the ratings.

Method of Computing the Amount of Non-Effective Expenditure Due to the Maintenance of an Excessive Proportion of Small Classes

It was shown in Table II, page 27, that the colleges studied vary markedly in the percentage of their classes that are small. The point at which a class becomes wasteful of the time of the instructor, owing to its small size, cannot be determined exactly. Since there is no question but that a class of ten students is a unit small enough to satisfy any advocate of close contact between teacher and student, it may be considered that a group smaller than this number is uneconomical. For the purposes of this technique, it makes little difference what size of class is chosen as the point at which lack of economy begins. The computations have therefore been carried forward on the basis of the percentage of classes with fewer than ten students. Independent study and honors courses have not been considered in this study as small classes.

It was shown in Table II, on page 27, that one institution has only 8.6 per cent of its classes with fewer than ten students. This college also has next to the largest median size of class found in any of the institutions studied, but there were no excessively large classes in the schedule of this college. It was the judgment of the survey staff that the curriculum of this college was excellent, so far as economy of organization was concerned. In all of the other colleges some of the types of inefficiency pointed out in the discussion of the instructional program in Part II were found. This college is therefore taken as the standard

with reference to the percentage of small classes maintained, and the further steps of this technique are based upon the assumption that inefficiency is involved in the maintenance of more than 8.6 per cent of all classes with fewer than ten students, since the standard college operates on this basis.[2] A college having a larger percentage than this could reorganize and improve the efficiency of its program by eliminating the excessive number of small classes and absorbing the students in such classes into larger class groups.

The question may well be raised as to why the standard is not based on the *number* of small classes, rather than the *percentage*. There has previously been shown a marked positive correlation between total course offerings and the size of the institution. There was also shown a negative correlation between percentage of small classes and number of students enrolled in the college. These relationships present statistical proof of the commonly observed fact that the larger colleges can arrange a more varied and extensive offering than the smaller colleges, without a proportionate increase in the number of small classes. It does not seem fair to penalize the larger institution for this advantage, as would be the case if the standard adopted related to the number of small classes rather than to the proportion which they form of the total.

In the second place, a standard set up in terms of number of classes would probably have a deadening effect on the curriculum. Colleges would hesitate to experiment with new courses even tho social needs might demand their introduction. On the other hand, a standard set up in terms of the proportion of the total would allow the opportunity for initiative in the working out of the curriculum of the individual college. It should be pointed out, however, that a decision as to whether the number or the percentage of small classes should be used is not a vital matter in setting up the present technique.

In setting up a standard for this item, and in making future revisions of the standard, care must be exercised to avoid the choice of a figure set by an institution whose curriculum is entirely too narrow to meet modern needs. The standard must always be set in the light of a full knowledge of the situation within the college. It would manifestly be possible to operate a college of liberal arts with a curriculum so narrow that every student would take exactly the same sequence of courses during his four years. Assuming that a student body of satisfactory size could be assembled, and that the holding power of the college was not abnormally low, it would follow that none of the classes would have fewer than ten students. This would clearly be an over emphasis on economy, since it is inconceivable that a modern college of liberal arts could possibly meet the social needs of the day without providing for some variations in the courses taken by students. A condition akin to that suggested does exist, however, in certain professional schools, particularly in law and medicine. Such institutions clearly have an advantage not enjoyed by a college of liberal arts.

[2] It should be borne in mind that the writer has no intention of setting the figure of 8.6 as the final standard. This example is carried thru to show the technique of setting the standard, which, as previously suggested, should finally be based upon a larger body of data.

The steps of computing the amount of non-effective expenditure per student due to the maintenance of an excessive proportion of small classes are as follows:

1. Calculate the total expenditure for instructional salaries for the semester (or term) being studied.
2. Calculate the total number of credit-hours taught in the college during the semester (or term) studied.
3. From items 1 and 2 compute the instructional salary cost per credit-hour offered.
4. Count the number of credit-hours represented by classes having fewer than ten students enrolled.
5. Compute the number of credit-hours which would be represented in classes of fewer than ten students by the maintenance of no more than the standard proportion (8.6 per cent) of classes of this size.
6. Compute the number of credit-hours which would be eliminated by reducing to the standard proportion of small classes, by subtracting item 5 from item 4.
7. Compute the total non-effective expenditure on account of small classes for the semester (or term) studied by multiplying item 6 by item 3.
8. Find the non-effective expenditure per student by dividing item 7 by the enrolment for the semester (or term) in question.
9. Compute the annual waste per student by multiplying item 8 by two if a semester plan is followed, or by three if a quarter plan is in effect.

If greater accuracy is desired, instead of step 9 the calculations of steps 1 to 8, inclusive, could be carried thru for the other semester (or terms) of the year, and the results added to item 8 to find the total non-effective expenditure for the year. Unless the situation in the college changes markedly from one semester to the next, reasonably accurate results will be obtained by doubling the figures for one semester, as suggested in step 9.

The essential steps of this technique are summarized in Table XIX, which shows the results of the computations for the thirty-four colleges studied. The columns of this table represent the calculations of steps 3, 6, 7, and 9.

The data of this table need no comment, since the computation of the various items has already been explained. The results in the last column are figures for non-effective expenditure per student in each college due to the maintenance of an excessive proportion of small classes. These figures are comparable to those for administration shown in Table XVII and those for operation and maintenance of the academic plant shown in Table XVIII.

Method of Computing Total Non-Effective Expenditure Due to Inefficiency and the Calculation of Total Effective Educational Expenditure

The final step of this technique consists merely in adding together the figures found in each college for the three types of inefficiency, resulting in an amount representing the total non-effective expenditure per

TABLE XIX. NON-EFFECTIVE EXPENDITURE PER STUDENT ACCOUNTED FOR BY THE MAINTENANCE OF SMALL CLASSES IN THIRTY-FOUR COLLEGES

College number*	Cost for instructional salaries per credit-hour taught during the semester studied	Number of credit-hours that would be eliminated by reducing number of small classes to 8.6 per cent of total	Total non-effective expenditure due to small classes during one semester	Annual non-effective expenditure per student due to small classes
22	$58.91	90	$5,301.90	$78.55
2	68.50	75	5,137.50	63.42
20	106.95	173	18,502.35	54.98
1	73.06	73	5,333.00	53.60
7	86.21	95	8,189.95	50.56
3	102.56	100	10,256.00	47.15
33	89.74	128	11,486.72	40.10
11	67.21	77	5,175.17	38.76
13	72.56	90	6,530.40	37.64
6	52.24	41	2,141.84	37.58
25	119.71	110	13,168.10	33.68
16	90.59	98	8,877.82	32.52
4	80.40	71	5,708.40	32.34
29	78.54	119	9,346.26	31.21
21	90.52	39	3,530.28	27.06
28	79.56	94	7,478.64	26.86
5	92.63	62	5,743.06	26.28
12	67.03	54	3,619.62	23.89
23	77.66	98	7,610.68	23.14
19	89.39	52	4,648.28	22.02
17	89.52	66	5,908.32	20.98
24	68.36	31	2,119.16	20.78
9	116.90	55	6,429.50	20.06
8	90.61	36	3,261.96	18.42
27	88.01	76	6,688.76	17.78
10	99.86	45	4,493.70	17.02
14	105.07	33	3,467.31	15.24
31	128.60	107	13,760.20	15.04
26	85.89	69	5,926.41	14.84
18	79.28	49	3,884.72	14.50
34	77.12	57	4,395.85	14.16
32	118.88	75	8,916.00	12.36
30	77.19	41	3,164.79	7.54
15	114.05	0	0	0

*Each institution is given the same number it carried in Tables XVII and XVIII.

student. In order to find the effective expenditure per student on the basis of equivalent efficiency, it is necessary to subtract from the actual expenditure for educational purposes the total amount that is non-effective. Table XX presents these data.

Data relating to size of class in the case of each institution are for one year later than the data for administrative and plant costs. From the data collected it has not been possible to unite the figures for a single year. While some violence may be done the true situation in certain of the colleges by this mixing of the data for two years, as a general rule the number and proportion of small classes do not vary markedly from year to year in a given college. Furthermore, for purposes of illustrating the technique of computation, the year of the data is immaterial, altho in an actual case it would be necessary to obtain all the data for a single academic year.

The final column of this table represents the amount being spent per student in each college after the subtraction of the amount of non-effective expenditure. This item should be interpreted as the maximum amount being put into the educational program. As has been previously pointed out, in many colleges that have an excessive expenditure for administration or for maintenance and operation of the plant, the actual performance of these functions is not as satisfactory as in the institution chosen as the standard. In such cases, altho the institution has been allowed the standard expenditure for the function concerned, it is probable that something less than this amount is actually being used effectively. The item called "effective expenditure per student" should therefore be construed as the maximum amount that under present conditions of management is actually being used effectively in the educational program. A refinement of the technique to overcome this minor weakness has been suggested in the preceding pages, but this modification could not be applied in the present treatment because of lack of data.

It is of interest to compute not only the non-effective expenditure per student, but also the grand total for each college. Table XXI presents this computation.

The total amounts of non-effective expenditure in some of the colleges shown in this table are startling and indicate marked possibilities for the improvement of educational efficiency. It should be recalled that the data relate only to educational expenditure and do not take into account unrealized potential income or inefficiencies in functions of a non-educational nature. Furthermore, as previously shown, the figures given are the *minimum* for non-effective expenditure, and the data of Table XXI should be read: College Number 30 is spending *at least* $7,180.60 which is not effective in producing an educational result.

Attention has already been called to the fact that there are two principal types of inefficiency, the one avoidable and the other unavoidable. In the computations of Tables XX and XXI no distinction is drawn between these two types. The unavoidable inefficiencies that affect the amount of ineffective expenditure per student are principally two: (1) that due to small enrolment; and (2) that due to location in

TABLE XX. ACTUAL EXPENDITURE PER STUDENT FOR EDUCATIONAL PURPOSES, NON-EFFECTIVE EXPENDITURE PER STUDENT DUE TO INEFFICIENCY, AND EFFECTIVE EXPENDITURE PER STUDENT, FOR THIRTY-FOUR COLLEGES

College number*	Actual expenditure per student for educational purposes	Non-effective expenditure per student				Effective expenditure per student
		Due to administration	Due to plant operation and maintenance	Due to small classes	Total	
14	$365.34	$13.74	$27.55	$15.24	$56.53	$308.81
9	363.89	19.65	24.38	20.06	64.09	299.80
3	390.76	30.44	16.04	47.15	93.63	297.13
4	356.67	28.99	0	32.34	61.33	295.34
8	338.77	21.42	7.56	18.42	47.40	291.37
31	308.85	0	3.74	15.04	18.78	290.07
15	326.38	13.02	27.67	0	40.69	285.69
16	340.62	12.40	12.23	32.52	57.15	283.47
20	339.41	9.23	1.43	54.98	65.64	273.77
25	315.85	3.16	6.04	33.68	42.88	272.97
32	293.29	0	15.35	12.36	27.71	265.58
10	294.10	17.80	4.01	17.02	38.83	255.27
33	290.42	0	9.07	40.10	49.17	241.25
21	272.64	7.81	0	27.06	34.87	237.77
18	260.98	9.62	0	14.50	24.12	236.86
17	273.49	10.70	5.25	20.98	36.93	236.56
27	258.76	2.01	4.73	17.78	24.52	234.24
5	287.16	28.47	0	26.28	54.75	232.41
19	268.28	9.36	7.75	22.02	39.13	229.15
12	261.45	14.01	7.05	23.89	44.95	216.50
11	270.03	15.89	1.51	38.76	56.16	213.87
28	239.98	1.36	0	26.86	28.22	211.76
13	257.68	13.76	5.27	37.64	56.67	201.01
7	274.39	23.22	0	50.56	73.78	200.61
26	214.99	2.80	0	14.84	17.64	197.35
2	296.65	36.58	0	63.42	100.00	196.65
34	207.27	0	3.16	14.16	17.32	189.95
1	280.90	38.51	0	53.60	92.11	188.79
29	209.75	1.02	0	31.21	32.23	177.52
24	188.50	3.23	0	20.78	24.01	164.49
23	190.60	4.05	0	23.14	27.19	163.41
22	246.27	4.49	5.46	78.55	88.50	157.77
6	221.18	26.49	5.28	37.58	69.35	151.83
30	152.84	.51	0	7.54	8.05	144.79

*Each institution is given the same number it carried in Tables XVII, XVIII, and XIX.

TABLE XXI. GRAND TOTAL AMOUNT OF NON-EFFECTIVE EXPENDITURE AND PERCENTAGE OF TOTAL EDUCATIONAL EXPENDITURE THAT IS NON-EFFECTIVE, IN THIRTY-FOUR COLLEGES

College number*	Grand total amount of non-effective expenditure	Percentage of total educational expenditure that is non-effective
30	$ 7,180.60	5.3
31	33,522.30	6.1
26	15,823.08	8.2
34	11,275.32	8.4
18	13,145.40	9.2
32	38,378.35	9.4
27	18,439.04	9.5
28	14,448.64	11.8
15	22,176.05	12.5
24	5,450.27	12.7
21	8,787.24	12.8
10	18,638.40	13.2
17	20,791.59	13.5
25	33,489.28	13.6
8	15,310.20	14.0
23	16,749.04	14.3
19	18,038.93	14.6
29	22,367.62	15.4
14	24,873.20	15.5
16	28,403.55	16.8
4	21,649.49	17.2
12	14,653.70	17.2
9	38,133.55	17.6
33	32,206.35	17.9
5	20,859.75	19.1
20	47,851.56	19.3
11	17,184.96	20.8
13	19,041.12	22.0
3	37,077.48	24.0
7	29,290.66	26.9
6	8,876.80	31.4
1	19,343.10	32.8
2	15,100.00	33.7
22	16,903.50	35.9

*Each institution is given the same number it carried in Tables XVII, XVIII, XIX, and XX.

a region where winters are severe or where fuel must be hauled for long distances. The administration of a college should not be held blamable for inefficiencies arising from these two causes, altho to a considerable extent the size of the enrolment can be influenced by administrative measures.

On the other hand, it must be said that the presence of a non-effective expenditure due to unavoidable causes does not produce any greater educational returns than that involved in any other form of inefficiency. For example, when the total educational expenditure per student of a college located in a mild climate and near to a fuel supply is compared with the same figure for a college located in a region of severe winters and far from coal mines, it could not be said that the additional expenditure for plant operation that is forced upon the latter institution is in any way productive of greater educational results than the comparatively limited expenditure for this purpose in the former college. Consequently, in the computation of effective expenditure per student, it is important that both the avoidable and the unavoidable types of inefficiency be calculated and deducted.

Effective Educational Expenditure per Student as a Measure of Educational Excellence

It remains to be shown that this calculated figure representing "effective educational expenditure per student" is a better measure of educational excellence than the figure of "educational expenditure per student" before the deduction of the non-effective expenditure. In order to test out this feature, three members of the staff, including the writer, all of whom had participated actively in the surveys of each of these colleges, rated the institutions according to their educational excellence. Values from one to sixteen were assigned, "one" representing the institution of highest excellence, and "sixteen" the poorest. Each of the three staff members made his own rating independently of the others, and the ratings were made before any of the data relating to effective educational expenditure per student were calculated. The criterion used in this rating was a subjective judgment of the general excellence of the college as an educational institution, taking into account as nearly as possible all the factors that might conceivably indicate excellence. The median of the three ratings on each institution was taken as the final rating of that college. The three ratings agreed rather closely, the average divergence of each staff member's ratings from the median being less than one-half a point on the sixteen-point scale. Correlations were then computed between the composite rating on educational excellence and the two sets of expenditure figures.

The coefficient of correlation (Pearson) between the rating and educational expenditure per student is $+.48 \pm .09$. The correlation between the rating and effective educational expenditure per student is $+.68 \pm .06$. It is apparent that the application of the technique of reducing the expenditure figure to the amount used effectively has improved the correlation with educational excellence by twenty points.

This means an improvement of approximately 40 per cent in the accuracy of the prediction of educational excellence.

It will be recalled that a refinement was suggested for the technique, whereby colleges would be assigned only a proportion instead of the standard expenditure for administration and for plant operation and maintenance, the amount assigned to be determined in each case by the effectiveness of the performance of the function. There is good reason to believe that the application of this technique would still further increase the correlation between effective educational expenditure and the rating on educational excellence.

CHAPTER XII

METHODS BY WHICH COLLEGES MAY IMPROVE THEIR PROGRAMS EFFICIENTLY

If the measure, "effective educational expenditure per student," has any merit as an indication of the excellence of the educational program, and the correlations presented in the previous chapter indicate that it has, the progressive college will desire to increase its expenditure at points which will be effective in increasing the size of this index of excellence. A review of the ways in which increased resources can be utilized to produce greater educational excellence is therefore at point.

One of the first methods by which increased resources can be utilized is in bringing up to the minimum the expenditure for administration and for plant operation and maintenance. This method applies only to those colleges whose expenditure for these items is now below the suggested standard. The indication in such a condition is that these functions are not being adequately supported, and any additional funds expended on these items, up to the standard, will result in raising the figure by which the excellence of the program is judged.

The second method by which increased resources may be utilized is thru an increase in faculty salaries. It will be noted that in the technique outlined no upper limit has been set for faculty salaries. This implies that in almost every college it is possible to improve the quality of the program, as measured by the effective expenditure per student, by increasing the average salaries paid faculty members.

The third method suggested whereby increased resources can be utilized for the improvement of the program of the college is thru a reduction in the teaching-hour loads without any increase in the number of small classes. With a constant enrolment this effectually means an increase in the teaching staff and a lowering of the ratio of students to faculty members. The technique for calculating the effective educational expenditure per student has been especially designed to allow this type of improvement in the program. Under such a plan, faculty members would be expected either to do a much better job of teaching, or to devote a considerable portion of their time to the production of scholarly literature and research. Either of these changes is a real gain in the excellence of the educational service of the college.

Finally, there is opportunity to utilize increased resources in such a way as to improve the educational program by increasing the expenditure on several of the smaller items of the budget on which a standard has not been set up. Among such items may be mentioned: (1) retiring allowances and sabbatical leaves for faculty members; (2) library; (3) instructional supplies; and (4) student welfare.

It would be entirely possible to set up a technique, similar to that suggested for administration and for plant operation and maintenance,

that would apply to each of the four items above mentioned. This has not been done for two reasons. In the first place, it was desired to keep the suggested technique as simple as possible. In the second place, it is the writer's experience that most colleges are not spending excessive amounts for these items. In every one of the colleges recently surveyed, increased funds could well have been devoted to each of these functions. It therefore seems useless to set up a standard of maximum expenditure for any of these items when none of the colleges with which the writer is familiar even approach a desirable minimum expenditure for these purposes.

The writer is conscious of one weakness in the technique, particularly with reference to its use as an index of educational excellence. The assumption has been made that the salary paid faculty members is, on the average, a fair index of the quality of staff member obtaining in the college. The assumption is not made that the true worth of each individual member of the faculty is accurately indicated by his salary, but only that the average salary is a fair index of the staff as a whole.[1] Such an assumption is supported by data presented by Reeves and Russell.[2] Conceivably, however, a college administration might follow the policy of using increased resources for a blanket raise in salary to all members of the existing staff. For example, if the funds available for faculty salaries increase 10 per cent, every member of the faculty could have a raise of 10 per cent of his salary. In most cases such a procedure would be a grave administrative mistake and would probably result in no marked improvement in the educational program. It is recognized that such a step would probably invalidate to some extent the indication of excellence afforded by the measure, "effective educational expenditure per student." On the other hand, if increased resources are used to provide raises in salary for the most competent members of the teaching staff and for those who improve their qualifications, and to attract others to the faculty who will raise its general quality, an immediate and direct gain is registered in the excellence of the program.

One other weakness is recognized in the use of "effective educational expenditure per student" as a measure of college excellence. This is the fact that the measure must be based on an accurate and uniform classification in the financial accounts of the colleges which attempt its use. It is obvious that unless the accounting is absolutely uniform among the group of institutions to be compared, the data lose completely their comparability. A fair degree of uniformity in financial accounting in institutions of higher learning seems likely to be accomplished within a short time,[3] and with the details of classification that have been set

[1] This assumption is probably not sound in the case of colleges having an unusually high percentage of women on the faculty, and certainly does not hold in the case of institutions that depend on the service of non-salaried "teaching brothers" or "sisters" of a religious order.

[2] Floyd W. Reeves and John Dale Russell. *The Measurement of College Excellence.* Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Vol. I, No. 4, September, 1929, pp. 35 ff.

[3] A significant step toward this end has recently been taken in the publication of the report of the National Committee on Standard Reports for Institutions of Higher Learning (Lloyd Morey, Urbana, Illinois, Chairman) entitled *Suggested Forms for Financial Reports of Colleges and Universities.*

forth in this study it should not be difficult for any college to set up its expenditures in such a way that they are strictly comparable with those used in this analysis.

The writer has a sincere hope that the technique herein described for setting up a measure of excellence of the educational program of a college may be found of use, not only to the standardizing agencies in their efforts to measure and evaluate the programs of the institutions composing their membership, but also to the administrators of colleges, who are interested in getting the largest possible educational returns from the funds which they have to expend.

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List of Bulletins in the Field of Education, Indiana University

The following is a list of the bulletins published by the School of Education, Indiana University.

All bulletins which are available at the present time can be secured thru the University Bookstore for fifty cents ($.50) per copy, with the exception of the *Second Revision of the Bibliography of Educational Measurements*, the *Bibliography on School Buildings, Grounds, and Equipment*, and *The Philosophy of Human Relations—Individual and Collective*, which can be secured thru the Bureau of Coöperative Research, School of Education, for seventy-five cents ($.75) per copy.

Proceedings of the High School Principals' Conference (November 23 and 24, 1923). Vol. I, No. 1, 1924. 85 p. (Supply exhausted.)

Investigation of Nursing as a Professional Opportunity for Girls. Part I, Technical Study; Part II, Vocational Information Bulletin. By Florence E. Blazier. Vol. I, No. 2, 1924. 69 p.

Proceedings of the Eleventh Conference on Educational Measurements. Vol. I, No. 3, 1925. 141 p.

Proceedings of the High School Principals' Conference (November 14 and 15, 1924). Vol. I, No. 4, 1925. 49 p. (Supply exhausted.)

First Revision of the Bibliography of Educational Measurements. Compiled by the Bureau of Coöperative Research. Vol. I, No. 5, 1925. 147 p. (Supply exhausted.)

Proceedings of the Twelfth Conference on Educational Measurements. Vol. I, No. 6, 1925. 76 p.

The Effect of Population upon Ability to Support Education. By Harold F. Clark. Vol. II, No. 1, 1925. 28 p.

Proceedings of the High School Principals' Conference (November 20 and 21, 1925). Vol. II, No. 2, 1925. 77 p. (Supply exhausted.)

A Cross-Indexed Bibliography on School Budgets. By Harold F. Clark. Vol. II, No. 3, 1926. 66 p.

A Comparison of the Results Made on Certain Standardized Tests by Pupils in the Bloomington High School Who Were Taught in Classes of the Same Grade by University Student Teachers and by Regular High School Teachers. By Carl G. F. Franzén. Vol. II, No. 4, 1926. 19 p.

Proceedings of the Thirteenth Annual Conference on Educational Measurements. Vol. II, No. 5, 1926. 103 p.

When to Issue School Bonds. By Harold Florian Clark and Paul Royalty. Vol. II, No. 6, 1926. 16 p.

Students' Attitude Toward Examinations. By Grover T. Somers. Vol. III, No. 1, 1926. 48 p.

Proceedings of the High School Principals' Conference (November 12 and 13, 1926). Vol. III, No. 2, 1926. 27 p.

Index Numbers in School Administration. By Harold F. Clark. Vol. III, No. 3, 1927. 35 p.

Topical Analysis of 234 School Surveys. Compiled by the Bureau of Coöperative Research. Vol. III, No. 4, 1927. 111 p. (Supply exhausted.)

Proceedings of the Fourth Annual Conference on Elementary Supervision. Vol. III, No. 5, 1927. 64 p.

Proceedings of the Fourteenth Annual Conference on Educational Measurements. Vol. III, No. 6, 1927. 66 p.

Some Phases of the Junior College Movement. By I. Owen Foster, Harold F. Clark, Willard W. Patty, and Leo M. Chamberlain. Vol. IV, No. 1, 1927. 125 p. (Supply exhausted.)

Second Revision of the Bibliography of Educational Measurements. By Henry Lester Smith and Wendell William Wright. Vol. IV, No. 2, 1927. 251 p.

Bibliography on School Buildings, Grounds, and Equipment. By Henry Lester Smith and Leo Martin Chamberlain. Vol. IV, No. 3, 1928. 326 p.

Proceedings of the High School Principals' Conference (November 18 and 19, 1927). Vol. IV, No. 4, 1928. 54 p.

The Economic Effects of Education. By Harold F. Clark. Vol. IV, No. 5, 1928. 39 p.

Proceedings of the Fifteenth Annual Conference on Educational Measurements. Vol. IV, No. 6, 1928. 73 p.

Proceedings of the Fifth Annual Conference on Elementary Supervision. Vol. V, No. 1, 1928. 54 p.

Proceedings of the High School Principals' Conference (November 16 and 17, 1928). Vol. V, No. 2, 1928. 33 p.

The Development and Use of a Composite Achievement Test. By Wendell William Wright. Vol. V, No. 3, 1929. 90 p.

An Analysis of the Attitudes of American Educators and Others Toward a Program of Education for World Friendship and Understanding. By Henry Lester Smith and Leo Martin Chamberlain. Vol. V, No. 4, 1929. 109 p.

Tentative Program for Teaching World Friendship and Understanding in Teacher Training Institutions and in Public Schools for Children Who Range from Six to Fourteen Years of Age. By Henry Lester Smith and Sherman Gideon Crayton. Vol. V, No. 5, 1929. 54 p.

Proceedings of the Sixteenth Annual Conference on Educational Measurements. Vol. V, No. 6, 1929. 96 p.

Proceedings of the Sixth Annual Conference on Elementary Supervision. Vol. VI, No. 1, 1929. 73 p.

An Analysis of the Duties of County School Superintendents and Superintendents of Schools in Certain Cities in Indiana. By Henry Lester Smith and Leo Martin Chamberlain. Vol. VI, No. 2, 1929. 94 p.

Proceedings of the High School Principals' Conference (November 22 and 23, 1929). Vol. VI, No. 3, 1930. 51 p.

Coöperative Studies in Secondary Education. By Henry Lester Smith and Carl G. F. Franzén. Vol. VI, No. 4, 1930. 121 p.

Proceedings of the Seventeenth Annual Conference on Educational Measurements. Vol. VI, No. 5, 1930. 103 p.

Proceedings of the Seventh Annual Conference on Elementary Supervision. Vol. VI, No. 6, 1930. 102 p.

A Study in Teacher Supply and Demand in Indiana. By I. Owen Foster, Robert K. Devricks, Harry N. Fitch, Earl C. Bowman, George L. Roberts. Vol. VII, No. 1, 1930. 77 p.

Proceedings of the High School Principals' Conference (November 7 and 8, 1930). Vol. VII, No. 2, 1930. 70 p.

The Philosophy of Human Relations—Individual and Collective. By Henry Lester Smith and Harold Littell. Vol. VII, No. 3, 1931. 326 p.

The Psychology of Human Relationships: Individual and Social. By Henry Lester Smith and Levi McKinley Krueger. Vol. VII, No. 4, 1931. 107 p.

Proceedings of the Eighteenth Annual Conference on Educational Measurements. Vol. VII, No. 5, 1931. (In process of publication.)